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Editor: J. W. ROSS *Assistant Editor:* J. M. PARKER

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Editorial Comment . . .

Making Accountants Into Managers

WITHIN the next ten years, according to an article in *Management Methods,* the most eligible top management group—those from 33 to 44 years of age—will decline by 2.6 per cent. The managerial shortage has been a subject of concern to businessmen and educators ever since the post-war industrial development began to strain the available resources of talent, and various efforts have been made to alleviate it. Executive development programs have sprung up in universities, professional associations, management groups and companies, but so far little agreement has been reached on the aims, objectives, methods, or even the value of such education for management.

This divergence of views has come about because the job of the top manager is so nebulous, complex and all-embracing. His functions and the demands made upon him may vary from industry to industry and from company to company. Because of this, many will say that it is impossible to develop a core of management knowledge that is abiding in its application. The answer to this, of course, is that management education is not aimed at indoctrinating the trainee with facts and theories; it is aimed at altering his basic attitudes and responses, and fostering in him a state of mind that will react automatically on sound principles, whatever the challenge may be. In this respect, the aims of management education are closely allied to the aims of the liberal arts program, and to say that a manager's viewpoint cannot be broadened, developed and enlarged by a systematic program of studies is to invalidate the whole basis of academic education.

This matter of cultivating a managerial response to situations as opposed to what may be termed the "specialist response" is admirably outlined in an article by T. R. Masterson and K. R. Henning appearing in the November 1960 issue of *Advanced Management.* The authors point out that through the early period of specialization which most eventual managers undergo, their actions are conditioned by loyalties to

the specialist group and by attitudes that are totally inappropriate to the management function. To illustrate, they use the parallel of the supervisor who has just been promoted from the working group. His first instinct is to pitch in himself and help his former co-workers meet their quota, whereas his new function is not physical activity but the overseeing and co-ordination of the production efforts of his group. The goal of management education, then, is to break down the habit patterns of the specialist and to inculcate in him new patterns of action based on sound managerial principles.

For the specialist, this will entail not only becoming familiar with the functions of the various other specialties but also, and principally, learning to integrate and co-ordinate these different sectors of the business. As Professors Masterson and Henning put it: "The formal goal of executive development can be stated . . . to develop more fully in an individual the ability to solve complex problems in business management analytically and by re-synthesis of the analyzed elements, and simultaneously to help him increase his capacity for carrying responsibility." To this, we might add that it also includes the development of the judgment faculty, that is, the ability not only to solve problems but to recognize when a problem exists.

True, this learning process may be instinctive, developing quickly or slowly in different individuals, but in the face of the present managerial shortage which soon threatens to become acute, we can no longer afford hit-or-miss methods. The process must be speeded up and the best weapon we have at hand is the management development program.

The Society of Industrial and Cost Accountants proposes to launch a three-year post-graduate program of management development that will serve the needs of the accounting specialty. To our knowledge, this will be the first comprehensive program in Canada designed for the development of the accounting manager. The first question that presents itself is—"Is this a sufficiently large group to warrant special attention?" The second question is—"Does accounting lend itself to management development?"

The first question can be answered by a resounding "yes." There were 30,000 accountants in Canada in 1951 and by 1960 this had risen to an estimated 50,000. The second question needs more intense deliberation. There is no doubt that accounting, more than any other specialty, provides the optimum experience and opportunity for the development of general managers. Accounting permeates every facet of business activity and the accountant's intimate knowledge of operations places him high on the list of managerial prospects. As Donald McMaster, Vice-President and General Manager of Eastman Kodak Company, Rochester, N.Y., said in the April 1954 issue of *Cost and Management*—"Cost and profit reports to general management . . . offer means of controlling all phases of the business from the purchase of the raw materials to the turning of these raw materials into manufactured articles."

The only area in which accountants are sometimes faulted is in the apparent difficulty they have in making the transition from specialist to generalist. Of all specialist groups, they have been accused of being the most inarticulate, the most

tightly bound by the confines of their traditions, the most reluctant to broaden their general outlook and the most inept in human relations. These are serious charges but, if there were any truth in such generalizations, that is all the more reason for introducing a study program aimed at reversing these very characteristics. In actual fact, though they share common loyalties and professional habits, accountants are individuals and as such they will benefit from a management training program in proportion to their respective abilities. It is important, though, that this training program be designed specifically for the accountant so that, operating from common assumptions of knowledge, background, and experience, it can proceed to break down the old specialist responses and instil the new ones of management value.

Methods of education for management have come a long way in recent years. Through experimentation and research, several important and effective tools have been developed. In addition to the standard lecture method, these include the case method, workshops and role playing, coaching and job rotation, as well as computer and other simulation games. With many of these methods now on a practical, well-established basis, the time is ripe to select the best of these for use in launching an educational program that could have vastly significant results for the industrial accountant and for the future of management in industry. Let's not miss the chance to get in on the ground floor.

NEW PRODUCTS FOR PROSPERITY

by R. D. Richardson,
Manager, Distribution and Specialty Transformers,
Canadian General Electric Co. Ltd.,
Toronto, Ontario.

With Canada's present over-capacity in plant and equipment, the author suggests the development of new products is one of the fastest and best roads to increased G.N.P. and national prosperity. In this article, he discusses the considerations that enter into a new product feasibility study and advocates a broader program of basic research for Canadian industry.

IT is no flight of the imagination to say that new products offer one of the best hopes for Canada's prosperity.

In the last five years the Canadian economy has faltered while vigorous growth has occurred throughout the world. It is startling and sobering to see that Canada's gross national product has declined since 1956, whereas Japan, the U.S.S.R., Germany, Italy, Sweden, the U.K. and many other nations have continued a steady upward climb throughout this period.

During the next nine years, Canada's work force will increase by 170,000 each year. It is obvious that the present standard of living cannot be maintained unless economic growth keeps pace with this three per cent rise in the work force.

As one Canadian executive has stated, "Canadian manufacturing as a percentage of gross national product is stagnant. From 1933 to 1959 its increase was only 3.4 per cent." This means that in 26 years Canada has come but a short distance toward industrial self-sufficiency. "Canadians import $236 per capita of finished goods. The British figure is $48, the American, $32. This is ridiculous."

The recession year of 1960 will go on record as one of Canada's most sterile in terms of clear-headed planning and progressive action. This was a year of great indecision and fruitless argument and debate.

There were the lean and hungry ones who couldn't stand to see Canada living high off the fat of the hog. There were those pledged to drive foreign capital from our shores. These were put to the sword by the charge of the anti-Coyne brigade. Some called for more basic research—while others argued that neither money nor scientists were available. Most called for less taxes. Just as many asked for more Government spending. More exports, exhorted the pep-talk boys. More tariff protection, countered hard-pressed secondary industry.

And so it went through 1961 until at last in the recent budget some specific action was taken. This, together with the prospect of at least a temporary lift in the economy, has lulled some of the general unease.

Admittedly, the proper sequence of events is to think and then to act. The trouble

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In his 20 years with the Canadian General Electric Co. Ltd., Mr. Richardson has been associated for the most part with the financial functions of several plants in both the consumer and producer goods fields. He has also participated actively in the formulation of the company's decentralization program. Before being appointed to his present position, he was Financial Manager for C.G.E.'s large apparatus operations. Mr. Richardson has taken a continuing interest in the activities of S.I.C.A. and his previous contributions to *Cost and Management* have included articles such as "Management Planning and Control Through Budgets" and "Budgetary Control for First Line Supervision."

with Canada's thinking of the past year is exemplified by the lady who said, "Of course I do a lot of talking. How do I know what I am thinking until I hear what I have to say?"

Let us hope that never again will Canada suffer from as great a surfeit of words. Canada needs not words but an increase in gross national product.

There are several ways of increasing gross national product—by automation, by people working harder, by more efficient methods, by better management and so on. This should lead to being more competitive in both foreign and domestic markets. However, at the present stage of Canada's development and with a large over-capacity in plant and equipment, the addition of *new* products may be the fastest and best way not only to increase gross national product, but to reduce imports and balance the foreign trade account. Insofar as the Canadian economy is concerned, it is not difficult to see the important contribution new products can make to growth and prosperity.

Let us leave the broader Canadian scene now and look at new products at the level of the business enterprise. Before doing so, however, it would be well to define what is meant by new products in the particular context of this paper.

For the purpose of this discussion, new products are defined broadly as those either not now manufactured in Canada, or elsewhere for that matter; or those which by major redesign are new products in an innovative sense. The main purpose of a definition which narrows new products to those which are truly new to at least Canadian manufacture is to emphasize that the addition of products which merely increase the problem of over-capacity will not, as a rule, yield gains for either the economy or the individual business enterprise.

OVER-CAPACITY—A GENERAL PROBLEM

The over-capacity which exists broadly in Canada is a major concern to most manufacturers today. This over-capacity has come about, at least in part, because a Canadian manufacturer's new plant and equipment or additions to existing plant, to be of a size worth building at all, must precede full use of capacity by a longer period than facilities in larger countries serving larger markets. Each year, in addition, new capacity is created in existing plants by breakthroughs in the use of more modern tools, equipment, methods and management techniques.

Any over-capacity in plant, equipment or in personnel is a surcharge against costs and profit. The addition of a product to a manufacturer's scope which increases the total supply in the market merely compounds the over-capacity problem. This results in an inadequate return which can bring about an industry-wide deflationary environment. This, in turn, will lead to a low rate of product development and, finally, the vicious circle is completed by being non-competitive with foreign-made products.

All this suggests that new products which are truly new and different, which create a new market demand or fill a demand now satisfied by imports rather than those which add to an existing supply, must be the focus of industrial effort.

In addition to higher rewards profitwise, the effect on morale of the enterprise can be most dynamic. A business is a living organization which can stagnate and die. New products can revitalize. By their very nature they offer excitement and challenge to creativity which, in turn, provide an environment for accomplishment.

A first step for any business is the formulation of a product policy developed from a complete appraisal of the present state of the business and its resources. A manufacturer may want to add products for a number of reasons other than excess capacity of plant and equipment. His cash position may beg to be put to use. A new product may help sales of existing products.

INVENTORY OF RESOURCES

It would be well for the manufacturer who is formulating a product policy to take an inventory of his resources. Some of the resources to be considered are:

Financial position—is cash available or is it obtainable?

Management personnel—does existing management personnel have the basic ingredients of leadership, of growth potential, drive, professional skill and competence?

General personnel—what is the level of skill of salesmen, engineers, other professional and non-professional personnel?

Special experience—does any uncommon knowledge exist in engineering, manufacturing or marketing?

Organization structure and climate—is the organization flexible and dynamic, offering room for growth, and challenging to personnel with adequate incentives?

Facilities—are plant and equipment up to date? Are warehouses and sales offices adequate to serve the market?

Location—are the main markets for the new products in good proximity to the manufacturing plant? Are raw materials readily available?

Patents—is patent position preferred or at least not at a disadvantage?

Public acceptance—is present and past goodwill at a high level? What about brand preference position?

A business which can claim a good count on all or most of this catalogue of resources is in a good position seriously to consider taking on new products.

HOUSE IN ORDER

Part of the process of developing a product policy is ensuring that the existing "house is in order." Are the present products profitable—and if not, why not? Are they too heterogeneous for the organization to handle efficiently with its present structure? Are some of the products on the knee of the S-curve with poor future prospects? Is pruning needed? Very often an unprofitable product or line can exact an undue amount of attention and energy. The act of weeding out an unrewarding product may release plant capacity and human energy sufficient to handle a new product or line of products much more efficiently.

NEW PRODUCTS SHOULD BE COMPATIBLE

It is, of course, most important that new products be compatible with those presently manufactured. This compatibility should apply not only to physical plants but to technical complexity, channels to market, customers and so on. The advantages of adding homogeneous new products are very great. Perhaps the most important is that they can be more readily absorbed and hence yield greater returns at an earlier point in time.

This is not to say that products cannot be tackled which are markedly different. In fact, if a business has most of the resources previously named, it would be decidedly better to add a product with some incompatibility than to take no action.

The objective should be to add new products having as much compatibility as possible.

FEASIBILITY STUDIES FOR NEW PRODUCTS

There are many ways to carry out feasibility studies for new products. The degree of thoroughness in terms of detail examined will vary greatly with the risk and investment involved, the sales volume potential, the technical complexity and so on.

Speaking from the point of view of products with which I am familiar, entry into the manufacture of a large product such as steam turbine generators, for example, requires a most painstaking study. The total investment and starting costs involved are so great as to be a drain on the overall profit position of the largest Canadian manufacturer for several years even with favorable operating results. In the event of a miscalculation of the available market or of the share which can be obtained or of the price level, the results could be disastrous. Analysis in depth is required of every facet of entry into a product of this size.

A smaller product such as a switchgear component, an electronic device or a household appliance will also require an examination of all pertinent criteria.

Action with respect to new products cannot be taken lightly. Everything about new products through the process of market research, design, manufacture and sales promotion is hard work and challenging far beyond the norm for established products. The investment dollars shown in the capital accounts are often exceeded by starting costs and expenses.

This does not argue for an overly cautious approach. Most organizations have a reserve capacity to handle pioneer-type projects at least every few years. It does, however, argue for regarding new product ventures as risks which have to be carefully considered and the direction properly set.

FEASIBILITY CRITERIA FOR NEW PRODUCTS

Even a "seat-of-the-pants" intuitive approach to decision making is based on a summing up or synthesis of the main factors involved. An intuitive thinker is probably a person who has the knack of marshalling and weighing facts in his head and is too lazy to put them on paper. Unfortunately, too often his mental arithmetic isn't as good as he thinks it is. It is a rare new product which can be tackled without careful consideration and documentation of all the factors involved. A good procedure might be to have those principals in the organization who are given to intuitive thinking put their judgments in a sealed envelope and as far out of their own minds, and the influence of others, as possible while a detailed analysis is made. Preconceived intuitive judgments may well be borne out by a careful analysis. However, the reverse may also be the case. Or, at least, a different approach to taking action may be indicated.

There are certain criteria which it is essential to state in quantitative terms. Estimates of profit, return on investment, investment cost, starting costs, sales volume, unit production, labor force, available capacity, variable expenses and incremental absorption of readiness to serve costs are probably the most important.

Other factors which cannot be evaluated quantitatively, however, must be fully considered and weighed into the final decision. All of these factors will greatly influence results. Some will be sufficiently tangible to influence directly estimates of

potential returns. Others, which may well have the most important influence of all, will be so intangible as to have no basis for evaluation quantitatively.

In the more tangible category are such factors as an appraisal of existing competitive products performing a like function, the technical complexity of the new product, patent protection, the degree of compatibility with the manufacturers' existing products with respect to marketing, engineering and manufacturing, and others. In the intuitive judgment category are such criteria as management and professional personnel strengths and weaknesses, labor relations climate and forecasts of possible competitive reaction.

In actual fact, all of these qualitative factors will be the final determinants of profitability and all of the other numerical value factors. Therefore, it is only possible in an academic sense to separate quantitative from qualitative criteria. A depth analysis probably requires the concurrent co-mingling or integration of all factors having a bearing.

STUDY TECHNIQUES

Once the need is accepted to carry out a depth analysis of all factors having a bearing on the potential return of a new product venture, many different techniques for analysis can be developed.

In one approach, all criteria to be considered are listed under the separate headings of the three basic functions of the business—marketing, engineering and manufacturing. A simple scoring scale expressed qualitatively as, for example, very good, good, fair, poor and very poor may be set up; or a numerical point system may be used. The latter, provided it is kept simple, has the merit of allowing different weights to be assigned to the criteria according to estimates of their relative importance. The numerical point system then offers both a kaleidoscopic picture made up of the score for all individual factors, plus a numerical summing-up of what might be termed very loosely the "chance for success" of the venture.

It is, of course, most important to recognize that such a technique will not give a pat, sure answer. In fact, it is probably safest to regard it as little more than an orderly documentation of all available facts for reference by all concerned to use in the decision-making process. If there is any danger that applying a point system evaluation will be misconstrued as an attempt to reduce everything to numbers and thereby to eliminate judgment, it may be better to settle for a qualitative measurement system.

Once criteria examination by the basic functions of marketing, engineering and manufacturing has been carried out and documented in simple summary form, those responsible for making the decision can do so armed with essential data and be reasonably sure that all factors have been considered. At this point, the criteria examination must be integrated with estimates of the profit and loss and cash flow economics of the venture. One set of data must complement the other, at least to the extent that no major contradictions remain unresolved. Even then, the final decision will be a matter of judgment and its important ally—decisiveness. As important as is thorough analysis, management must be prepared to make a decision without possession of total information and insight.

ORGANIZING THE FEASIBILITY STUDY

There are several alternative ways of organizing a feasibility study. A broadly-

trained man can be detached full time to make the study, consulting with key, expert personnel in each of the operating functions. Or, a task force can be set up with representatives from each function. The individual or the study team can be given scope merely to assemble the facts or they can be asked to make a recommendation.

In any such process it is most essential to ensure that all key personnel are fully consulted and that communication "sells in" the project as the study proceeds. The new product venture having the best chance of success is one which has the enthusiastic support of the organization. This tends to argue for the task force approach which uses maximum consultation with line personnel by individuals understanding the work of the basic functions of the business. This "communicate-as-you-go" process can be most essential to getting the project off to a driving start.

BASIC RESEARCH AND PRODUCT DEVELOPMENT

In any new product program one of the most difficult problems for Canadian industry is the question of how far to go in basic research and engineering development. Successful product innovation can come about merely through the application of known technology or by running the entire circuit of basic research and discovery of new technology through engineering application of such discoveries to new products.

For many years, Canada's industrial activity and growth waited on the product developments of larger nations. The Canadian engineer's role was that of a copier, adapter or modifier. Funds for anything more than a recasting of existing product design were seldom available.

Since the last war, many Canadian operations have moved slowly but nevertheless, surely, into product development work and even farther back toward fundamental research.

By what economic logic should Canadian firms play any other game than that of the copier waiting to pounce upon the latest technological breakthroughs paid for by dollars put to work in foreign lands having tenfold volumes as incentive?

Canadian industry might ask itself certain questions on this account:

(1) What are we paying each year in taxes toward the education of engineers and scientists, only to have many of those with the greatest potential attracted away from this country?

(2) The incidence of new product failures in the U.S.A. is very great. Instead of taking this to be a measure of the high risk involved in new product ventures, why not regard it as evidence of the high rewards attendant on successful projects? Is not the challenge to Canadian industry then to reduce the incidence of abortive ventures by more careful selection, thus helping to equalize the ratio of development costs with countries which have the advantage of larger potential markets?

(3) Do we believe that it is possible to carry out successful, vigorous engineering work of any kind while restricting the vistas of young creative people to adaption and copying? This is an anomaly which must either force Canadian engineers into mediocrity or to other lands.

It was Ralph Waldo Emerson who said:

"A man should learn to detect and watch that gleam of light which flashes across

his mind from within, more than the lustre of the firmament of bards and sages. Yet he dismisses without notice his thought, because it is his. In every work of genius we recognize our own rejected thoughts: they come back to us with a certain alienated majesty."

In all this there is an argument for more innovative engineering development. It is also suggested that Canada should undertake more fundamental research as well. But once again the key to making such research economically feasible for Canadian enterprise is careful selection.

One might make a case for the following order and procedure during the sixties with respect to new products.

(1) Increase greatly Canadian self-sufficiency on the many manufactured goods now imported, using the process of adaption.

(2) Accelerate gradually during the next few years the amount of engineering innovative work on new products across a fairly wide spectrum.

(3) Begin planning at once for the selection of a few products having perhaps unique or at least the strong support of abundant natural resources on which fundamental basic research might advantageously be undertaken, so that by 1970 Canada may be a world leader on at least the few products chosen.

It seems obvious that Canada must shoot with a rifle and not a shotgun in the contest for world markets which lies ahead. With the rate of new technological discovery accelerating to an explosive rate, Canada has an opportunity to carve out its own special fields in which to obtain leadership. The opportunities are so great that even the world's giants in science must give way in those product areas chosen by smaller nations for this special endeavour.

INDUSTRY AS A CUSTOMER-SATISFYING PROCESS

The need for customer focus in the selection of new products is perhaps the best way to reduce the incidence of abortive new product ventures.

The *Harvard Business Review* in the January-February 1961 issue carried an article entitled "Selecting Profitable Products." In this paper, reference is made to new product introductions and the appallingly high mortality rate—of the new products placed on the market by 200 leading packaged goods manufacturers, 80 per cent failed—for reasons other than insufficient capital.

Why did these product innovations fail? Undoubtedly, because managements were not sufficiently customer-oriented to understand the real needs of the market.

Also from the *Harvard Business Review* in the July-August 1960 issue, Theodore Levitt deals with customer focus in his article "Marketing Myopia."

> "The railroads did not stop growing because the need for passenger and freight transportation declined. That grew. The railroads are in trouble today not because the need was filled by others (cars, trucks, airplanes, even telephones), but because it was not filled by the railroads themselves. They let others take customers away from them because they assumed themselves to be in the railroad business rather than in the transportation business. The reason they defined their industry wrong was because they were railroad-oriented instead of transportation-oriented; they were product-oriented instead of customer-oriented."

A further extraction from the article on "Marketing Myopia" is appropriate:

"Industry is a customer-satisfying process, not a goods-producing process, and this maxim is vital for all businessmen to understand. An industry begins with the customer and his needs, not with a patent, a raw material, or a selling skill. Given the customer's needs, the industry develops backwards, first concerning itself with the physical *delivery* of customer satisfactions. Then it moves back further to *creating* the things by which these satisfactions are in part achieved. How these materials are created is a matter of indifference to the customer, hence the particular form of manufacturing, processing, or what-have-you cannot be considered as a vital aspect of the industry. Finally, the industry moves back still further to *finding* the raw materials necessary for making its products."

To avoid "Marketing Myopia" it is suggested that new product studies should begin in the market place.

New products might well be subjected to the following "Tests for Value" to be applied to every material, every component and labor operation on the product.

Does its use contribute value?

Is its cost proportionate to its usefulness?

Does it need all its features?

Is there anything better for the intended use?

If these questions are all asked in an approach strongly focussed on customer wants and needs, industry will have taken a most important step in the direction of selecting and designing successful new products.

Utilitarian value does not mean that products must be garbed in sombre clothes. The deluxe product, the chrome trim, the fine furniture, the good clothes are one of the sweet fruits of our free enterprise way of life. Utilitarian value does mean, however, that industry must produce and sell at a cost which is competitive with the real value of the product as it is appraised by the customer. The usefulness of the product should be the prime factor in its design.

CONCLUSION

In summary then, an attempt has been made to show the importance of new products to Canadian economic growth—to stress the importance of careful selection—to outline some of the more important feasibility criteria—to urge a confident and aggressive role in engineering innovation with well-chosen areas for basic research and, finally, to approach new product ventures with the objective of providing value to the customer and meeting his needs and wants at all times.

Canadian industry can and should accept the challenge to play a full part in the development of new products to ensure economic growth and to make its contribution to the betterment of mankind.

For further reading

SELECTING PROFITABLE PRODUCTS, by John T. O'Meara, Jr., *Harvard Business Review*, Jan.-Feb. 1961.

COST CONTROL IN PRODUCT FEASIBILITY DECISIONS, by Yasuo Yoshida, *N.A.A. Bulletin*, Feb. 1961.

PRODUCT PLANNING, by Leslie F. N. Clements, *The Canadian Chartered Accountant*, Nov. 1960.

WHY NEW PRODUCT PROGRAMS FAIL, *The Management Review*, Aug. 1959.

The Economic SCENE

by J. V. Poapst,
School of Business,
University of Toronto.

FABRICATION GAPS IN CANADIAN INDUSTRY

TWO concurrent conditions in Canada recently have been a high level of imports of goods and services on the one hand and a high level of unemployment on the other. In 1960 imports, at $8.1 billion, were 23% of GNP, and unemployment averaged 7% of the labor force. High levels of international trade based upon specialization and economies of scale in production are desirable. However, Canada's high level of unemployment was accompanied by a large surplus of imports over exports and consequently a large increase in foreign indebtedness. These conditions invite an examination of the composition of imports for possibilities of producing domestically significant items that are currently purchased abroad. The recently lower exchange value of the Canadian dollar and the government's objective of tightening tariff policy add to the timeliness of such a review.

A convenient source on this subject is the annual statistical report "Fabrication Gaps in Canadian Industry," published by the Ontario Department of Commerce and Business Development. The data below are all drawn from the latest edition of this publication.

IMPORTS INTO CANADA BY MAJOR COMMODITY GROUPS AND DEGREE OF FABRICATION, 1959

Major Commodity Group	Value	Degree of Fabrication —%		
		Raw	Manufactured	
	$Mil.	Materials	Partially	Fully
Iron and iron products	2,092	1	1	98
Non-metallic minerals and products	706	57	2	41
Agricultural and vegetable products	684	46	17	37
Non-ferrous metals and products	471	10	6	84
Fibres, textiles and textile products	420	15	5	80
Chemicals and allied products	327	—	—	100
Wood, wood products and paper	272	4	25	71
Animal and animal products	147	50	15	35
Miscellaneous commodities	390	—	—	100
Total	5,509	17	5	78

Classified by degree of fabrication, commodity imports into Canada are predominantly fully-manufactured goods. Of a total of $5.5 billion in 1959, 78% were fully manufactured, 5% partially manufactured, and 17% were raw materials. Over the latter part of the 1950's there was little change in these proportions, fully-manufactured commodity imports being 76% of total in 1955.

There is a substantial variation in degree of fabrication between the major commodity groups. Fully manufactured goods ranged from 100% of imports of chemical and allied products to 35% for animal and animal products. Partially manufactured goods were what might be described as a significant proportion of total imports in only three major commodity groups: wood, wood products and paper (25%), agricultural and vegetable products (17%) and animal and animal products (15%). Taken together, fully and partially manufactured goods were 96% of total imports of wood, wood products and paper.

By far the largest domestic fabrication gap lies in the major commodity group of iron and iron products. Imports for this group in 1959 amounted to $2.1 billion (or 38% of the total for all commodities) of which 98% comprised fully manufactured goods. Two sub-groups of iron products accounted for over one-half the total imports of the group: non-agricultural machinery ($585 million) and vehicles, chiefly of iron ($535 million). For fully manufactured goods the fabrication gap in this major commodity group, with the exception of the minor group of animal and animal products, increased at the fastest rate during the latter part of the 1950's. Fully manufactured imports in the iron and iron products group increased by 32% from 1955 to 1959, while those of the other major groups increased by 27% (agricultural and vegetable products; chemicals and allied products) or less.

In recent years there has been no significant trend in the proportion of fully manufactured imports in individual commodity groups, with one exception. The proportion for fibres, textiles and textile products increased year by year without interruption from 70% in 1955 to 80% in 1959.

Much has been said in recent years about competition from low-wage countries. Low wages are unquestionably an advantage to producers, but their significance can be over emphasized. In 1959, 297 leading commodities accounted for $3.1 billion, or 56% of total commodity imports. The major source of 263 items, amounting to $2,653 million, or 85% of the total for the leading commodities, was the United States. Other countries were the major import-source of only 34 leading items, the aggregate amount of which was $443 million. As of 1959, Japan, the low-wage country that seems to have aroused the most concern, was the major import-source of only six leading items amounting to $56 million.

Next to the United States, the United Kingdom was the largest source of commodity imports. It was the major import-source of 19 leading items which totalled $337 million, or 11% of the total for leading items. Imports of new passenger automobiles, at $192 million, comprised by far the largest item for which the United Kingdom was the predominant import-supplier. The United Kingdom was also the leading import-source of electrical steam generators and parts ($27 million), worsted and serges ($22 million) and china and porcelain tableware ($14 million). Should the United Kingdom decide to sacrifice commonwealth trade preferences to enter the Common Market these fabrication gaps will have particular significance.

A share of foreign markets helps to achieve large-scale production and hence competitiveness in domestic markets. A search for similar fabrication gaps in other countries might reveal potential additional outlets for products that would make entry into the domestic market more attractive to Canadian businessmen. The lower exchange value of the Canadian dollar not only encourages domestic production, it invites a look abroad.

CONTINUING EDUCATION FOR THE INDUSTRIAL ACCOUNTANT

by J. N. Allan,
Executive Vice-President,
Society of Industrial and Cost Accountants,
Hamilton, Ontario.

For the past two years, the Society's Committee on Post Graduate Studies has had under consideration the development of a program of management education for the graduate accountant. The result has been that a pilot course as recommended by the Committee will be held in Toronto next year. This article outlines the background of the study and the Committee's recommendations for the curriculum of the course.

EVERY YEAR thousands of graduating accountants receive certification of professional qualification and the admonition that the cherished and hard-won certificate represents the conclusion of but one phase of learning. The graduate is reminded that he must continue to increase his technical knowledge if he is to advance in his profession. Thus warned and inspired, the new accountant, if he has the ambition to do so, has little difficulty in finding ways and means to increase his technical competence. There are a number of alternatives available.

Continuing education can be achieved through professional journals and business publications, through enrolment in courses on a wide variety of technical subjects, or through attendance at seminars and conferences designed to stimulate his thinking and to provide opportunities for exchange of knowledge and experience with others who have similar interests. It is essential that the accountant, old-hand as well as fledgling, take advantage of these forms of continual self-improvement if he is to increase his technical competence and keep abreast of changing techniques and improvements in the profession. It might be added, too, that in most cases employers are ready and willing to provide financial assistance towards any well-conceived effort at self-improvement.

But industrial accounting, because of its role in business, brings the individual eventually into the realm of management. If the accountant is to progress and serve his ultimate purpose in the enterprise, he must possess not only the technical skill to prepare accounting data, he must develop a "management perspective" in his analysis and preparation of information for management policy and decision-making.

The accountant who has reached management level, or who at least has arrived at the threshold of management, must therefore be both a specialist and generalist. Technical specialization is only the first prerequisite. He must in addition develop a breadth of perspective, a capacity for objective appraisal, and an appreciation of the inter-relationships of management problems. He must also be aware of the importance of good human relations in dealings with his associates and subordinates, and he must have a developed capacity for self-expression in his role of interpreter and communicator of information.

The latter requisites are less easily acquired since the process of specialization, by its nature, allows little time for the development of these attributes. How can the accountant be prepared for this role?

THE STUDY COMMITTEE

This was the question to which the Society of Industrial and Cost Accountants sought an answer several years ago when the national Board of Directors authorized the appointment of a committee on continuing education. The task set before the committee was to investigate the validity of the purported need for a program of continuing education for the industrial accountant, and if such need was in evidence, to make recommendations as to what form the program should take. The committee appointed to carry out this assignment was comprised of seven S.I.C.A. members representing different classes of industry and four non-members representing certain disciplines concerned with management education as follows:

CHAIRMAN

G. K. Hutchings, B.Comm., C.A.,
Vice-President—Finance,
Smith Manufacturing Co. Ltd., Weston

MEMBERS

M. C. Coutts, B.Sc., P.Eng., R.I.A.,
Vice-President—Manufacturing,
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W. B. Coutts, B.A., C.A.,
Professor of Accounting,
Institute of Business Administration,
University of Toronto, Toronto

H. C. Grant, Ph.D.,
Head, Management Service Division,
Deloitte, Plender, Haskins &
Sells, Toronto

D. R. Ladd, A.B., M.B.A., D.B.A.,
School of Business Administration,
University of Western Ontario, London

G. H. Milne, P.Eng., C.A.,
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Horton Steel Works Ltd., Fort Erie

J. G. McKnight, F.C.I.S., R.I.A.,
Vice-President—Finance,
Salada-Shirriff-Horsey Ltd., Toronto

G. Moller, D.Jur., C.A., R.I.A.,
Vice-President & Secretary-Treasurer,
Robertson-Irwin Co. Ltd., Hamilton

S. L. North, Ph.D.,
Consultant—Industrial Psychologist,
Hamilton

P. J. Robinson, P.Eng., M.B.A., R.I.A.,
Co-Ordinator—Marketing Research,
Socony Mobil Oil Co., Inc.,
New York (formerly Toronto)

E. W. Scott, R.I.A.,
Assistant General Manager,
The Ryerson Press Ltd., Toronto

M. S. Sutherland, C.A.,
Secretary-Treasurer,
Burlington Steel Co. Ltd., Hamilton

Early discussions of the committee led to agreement that the value of the accounting function in business could be greatly enhanced if the time gap between the attainment of technical competence by the accountant and his acquisition of "the management outlook" could be diminished. They reasoned, based on their own wide and varied experiences and their knowledge of the experience of others, that a great management resource could be unlocked earlier if a means could be devised to diminish this time lag.

Having agreed that the need existed, the committee sought a means of testing their conclusions more widely through a survey of senior executives in a variety of types

and sizes of industries. First, however, they thought it advisable to develop their thesis further and to establish objectives and a tentative program for evaluation in the survey.

QUALIFICATIONS FOR ENROLMENT

The committee defined the typical person to whom such a program would be directed as follows:

> One who has acquired through formal courses, reading and practical experience that body of knowledge which is included in the R.I.A. course. He is the accountant in an administrative position who has a sound basic knowledge of financial accounting, a thorough understanding of all aspects of cost accounting including budgetary control, profit-volume-cost relationships, return on investment and various other uses of accounting related to management planning and control. In short, he would be a technically qualified and competent administrative accountant.

It was recognized also that depending upon the demands of his particular job situation the typical registrant might possess or require even further specialized knowledge in such fields as corporate finance, data processing, operations research and other spheres of knowledge related to his position. However, it was considered that these latter would not be prerequisites for the planned course and that persons desiring to pursue such studies were being amply serviced through present courses and seminars including those offered by S.I.C.A.

NATURE OF THE PROGRAM

The next question considered was, "What type of program of continuing education should be established for technically qualified accountants?" The committee reasoned thusly: it is the function of accounting to translate business activities into the common language of money and to show the effect of decisions made at all levels of management in terms of profit or loss. The accounting function cuts across every facet of business organization. Therefore, judgment in the application of accounting principles, accuracy in interpreting the results of the past or projections into the future and speed in reporting the results are vitally important if management is to be provided with a sound basis for decision-making in business planning. In the words of one top executive, "Management accounting is a calculus of increments and opportunities. Management makes choices, trying to select the right course of action among competing alternatives. The cost of choosing one is measured by the gain that would have been realized by choosing the other. If the accountant would properly play his part as "figure specialist" in business, he must learn to think in these terms, and he must provide for management the facts and figures that correctly measure the alternative opportunities, both in anticipating the decisions and in appraising their propriety retrospectively."* It follows then that the accountant's role, even at the sub-management level, is quasi-managerial in nature in that he alone outside of general management occupies a vantage point from which possible problem areas can be spotted—possibilities of which the implications may not be

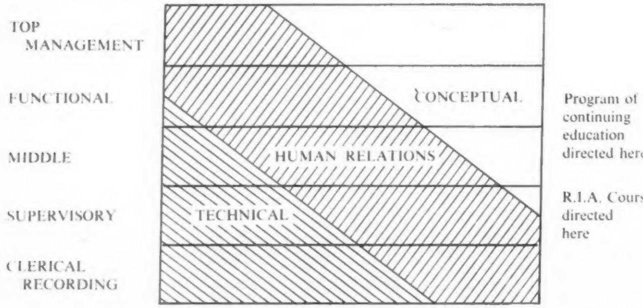
*R. B. Taylor, Vice-President and Treasurer, The Steel Company of Canada Limited in an address to the National Conference of the Canadian Institute of Chartered Accountants in 1959.

apparent at operating department or division level, and which may become realities before management in the administrative process has an opportunity to identify and take preventive or corrective action.

Thus it was reasoned that the accountant, if he is to progress in his field, must possess more than accounting (technical) skills since technical skills, after all, are the summarization of proven solutions to known problems. He needs management or conceptual skills to enable him to perceive with a greater degree of sophistication the forces acting upon the business, both internally and externally, which must be taken into consideration in planning and decision-making. The basic education of the accountant does not and cannot prepare him in this way because accounting courses are of necessity technique-orientated and because the student in accounts may not have the maturity or the experience background that would enable him to perceive, let alone appreciate, the factors involved in this fourth dimension of accounting.

This idea was also expressed, perhaps more succinctly, by Mr. Walter Mitchell in outlining the Advanced Management course developed by the Society for the Advancement of Management. Mr. Mitchell said:

> "Some analysts have said there are three primary types of skills required by a manager:
>
> (a) technical: the knowledge of the business and its processes necessary to make competent decisions;
>
> (b) human relations: the skill that enables a man to motivate others and to develop their skills; and
>
> (c) conceptual: the ability to inter-relate the various factors and forces generated within the business and those impinging upon it from the outside, as a basis for adequate decisions and policy.



> "Obviously, technical skills are most important to the man in the supervisory and middle-management level. Human relations skills are important at every level and in every walk of life, as we all agree. Conceptual skills come in connection with the integration and co-ordination phases of management."*

* Walter Mitchell, Jr., "The S.A.M. Advanced Management Course". Advanced Management Magazine—June, 1960 issue.

DEFINITION OF AIMS

It was therefore decided that the aim of the program of continuing education should be to develop in the accountant a broader appreciation and depth of understanding of business management to enable him to utilize his technical skills more effectively in contributing to corporate planning and decision-making, and in the process, to prepare those with the highest potential for positions of top responsibility.

Over a period of two years the committee devoted exhaustive study and discussion to the formulation of a program to achieve this purpose and which could be exposed to appraisal and criticism by the Society's Board of Directors and by those company executives who would be included in the opinion survey. Succeeding pages carry an outline of the program as finally amended to incorporate some of the suggestions resulting from the survey. The survey indicated conclusively that there is a need and desire for this program conceived under the Society's auspices and that business leaders will welcome its implementation and extend their support.

FORM OF THE PROGRAM

The committee decided that to achieve its objectives, the program should extend over a period of three years rather than take the form of a concentrated course of several weeks' or even months' duration. The longer period will allow for better assimilation of the program content and will provide the opportunity for the student to relate his course progress to his job situation. The program will commence with a seminar of one week, preferably in residence at a university or similar environment. In each of the three succeeding years there would be weekly or bi-weekly class sessions embracing a total of eighty hours per year. At the end of the three years there will be a two-week seminar preferably in residence.

The one-week period at the beginning will be for orientation and indoctrination. The class sessions will follow the typical lecture, note-making, problem-solving pattern, but will gradually shift to sessions involving class participation, case discussion and practice in decision-making. In the latter stages the participants assume the role of leader with the course moderator acting as observer and consultant. The final two-week period will be devoted to practice in management decision-making and business games with the use of computers. The number in any one class will be limited to twenty people.

A pilot course will be conducted in Toronto next year. Depending upon the results obtained and the extent to which expectations are fulfilled, the course will then be extended to other centres in Canada.

PROSPECTUS re POST GRADUATE COURSE

Proposed Outline of Course

FIRST YEAR:

Basic Concepts in Management Practice

Technological Development and Management Practice

1. Changing Nature of Management
2. Growth of the Specialist in Management as a supervisor of people and co-ordinator of resources
3. Aims and Organization of Business Functions
   a) aims of business in competitive economy and organizational structure
   b) introduction of information and communication theory

4. Application of applied science to various fields of business and industry
5. Techniques to increase efficiency in administration of human and capital resources
6. Techniques that help to quantify and thereby reduce factors of uncertainty in decision-making
7. Methods of Data Collection, Processing and Correlation
8. Utilization of human resources
9. Practice in Management Problem-Solving and Decision-Making
   a) Individual projects
   b) Group projects
   c) Critical analysis of basic concepts, techniques and methods.

SECOND YEAR:

Contributions to Modern Management Thinking from:
1. Economics
2. Politics
3. Social Science

Human Relations Developments and Modern Management
1. The influence of the social environment on productivity (e.g.—Hawthorne Studies)
2. Group Dynamics
3. Techniques in Management Behaviour concerning:
   a) perception of basic issues
   b) rational decision-making
   c) creativity and innovation
   d) human resources

Case Studies of Senior Management Behaviour

Practice in Management Behaviour Techniques and Innovation Development applied to:
1. Organization Planning
2. Executive Selection and Develoment
3. Production and Automation
4. Product Design and Innovation
5. Personnel Policy and Practice

THIRD YEAR:

Practice experience in solving complex management problems where various inter-related areas of business activity are involved in decision-making. Particular emphasis to be given to innovations and forward planning.
1. The Design-Production-Marketing Process
2. Accounting Data and Financial Policy Development
3. Organization for Maximal Gain from Research
4. Policy Change and Effects on Sales and Profits

Corporation Finance and Case Studies in Controllership (selected readings for seminar discussions)

Practicum: Two weeks in residence devoted to practice integration of course work in:
1. Study of Business Policy, Strategy and Business Gaming in the Practice of Management
2. Study of Human Behaviour Assessment and Management Development in Organization Planning Gaming.

TOPICAL comments

LOOKING AHEAD

Shift in market emphasis can be expected as Canadians become better educated. By 1970, six or seven out of every ten people entering period of family formation will have had high school education in contrast to the present four out of ten; university graduates will have increased to 15 out of 100 from present eight out of 100. Marketing-wise, this means more money will be spent on medical care, financial security, bigger homes, furniture, and such pursuits as travel, sports, art, music and books. Besides being more security- and culture-minded, studies show the better educated person spends more money on child food and clothing, liquor and beer, frozen foods, etc. (*Impact*, July 1961)

Ultrasonics have a bright future in industry for machining, testing, cleaning, soldering, welding and detecting. Already in limited use, ultrasonics is the term for the force generated by sound waves of such intense frequency that they are beyond the range of human hearing. This force can crush its way through the hardest diamond cleanly; weld two pieces of metal into one with such force that it shows no evidence of heat; clean the dust and oil film from the most delicate watch safely. (*Management Rev.*, July, 1961)

Possibility of serious water shortage in U.S. within next decade has set at least 25 major companies searching for new sources of supply, says *Exchange*. Distillation, filter or membrane systems, and freezing of sea water are some of the methods being tested. Most promising method of reclaiming water seems to be the Zimmerman method of subtracting sludge and sewage from contaminated waterways. (*Controller*, Aug. 1961)

Aging process may be slowed and life span increased by taking a pill, if present experiments in the U.K. are successful. Theory of the experiment is that the chemicals the body naturally produces to ward off oxidation gradually disappear as we age. The pill would replace these chemicals. So far, in experiments with mice, half-survival time (age at which 50% of the animals were dead) has been increased by about 20%. (*FP*, July 29/61)

OF GENERAL INTEREST

Canadian productivity growth per annum over the period 1949-1958 was only 1.8% as compared to 5.5% in Japan, 5.3% in West Germany, 4.5% in Italy, 3.7% in France and 2.3% in the U.S.A. Over the same period, unit wage costs in the Canadian manufacturing industry increased by 22% as compared to a U.S. rise of only 7%. (*Industry*, July 1961)

The seismograph, the device used to measure earthquakes, has been used by the oil industry to map possible oil-bearing formations of land since the mid-1920's. A mild charge of dynamite is exploded in a small bore hole; the resulting shock waves vary in bounce according to the different strata and earth formations they encounter, much as a rubber ball bounces differently on concrete or in sand. The waves are picked up by strategically located geophones which transmit signals to a seismic truck where they are amplified and translated onto a permanent film record.

Airline bargains continue to outdo each other. Latest plan announced by American Airlines is half-fare reductions for passengers aged 12 through 21. Such measures as family travel plans, reductions for certain groups, are designed to tap new income for an industry in which traffic is beginning to level off. For years, airline traffic grew by about 10% annually but now the number of empty seats is increasing and so are deficits (*Bus. Week,* Aug. 12, 1961)

Total staff of the Federal Government in April 1961 numbered 334,540 as compared to 334,222 in April 1960. Total earnings were $119,151,000 versus $113,349,000 the previous year. Of the staff employed in April 1961, 133,691 earning $50,103,000 were employed in agency and proprietary corporations and other agencies; 200,849 earning $69,048,000 were employed in departmental branches, services and corporations. (*DBS,* Aug. 11, 1961)

ON THE PERSONAL SIDE

Fading memory? Losing your grip? It could be a sign of premature aging brought on by the physical stresses and strains to which so many executives are subject. Such symptoms are not necessarily the result of advancing age, many top authorities feel, but often coincide with it and so are considered inevitable in the aging process. Actually, premature aging can be the result of years of physical abuse: lack of sleep, overwork, heavy social drinking; and hardening of the arteries, especially those of the brain. Premature aging can be slowed if certain rules of living are assiduously observed:

- Learn to delegate authority instead of burdening yourself with a mass of unnecessary detail.
- Find a hobby, preferably one involving physical exercise such as gardening or carpentry. In any case, exercise regularly.
- Eat lightly five times a day. The old three-square-a-day convention is just that and has no basis in medical fact. A light snack in mid-morning or at bedtime pampers digestion and avoids hunger pains.
- Cut down on animal fats. Cholesterol is a prime suspect in arteriosclerosis. Most doctors advise taking a vitamin supplement because the body's ability to absorb vitamins from natural sources declines in middle age. In this, be guided by your physician.
- Take a short nap after lunch to combat afternoon drag. If troubled by insomnia at night, don't worry about it, but get up and read or write letters till you feel sleepy.
- Have your home and office air conditioned to reduce stress on heart and lungs.
- Exercise your memory by studying a language, consciously trying to recall facts and figures, etc. Much memory failure is due to disuse of the faculty. (*Dun's Review,* July 1961)

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COST ANALYSIS AND PRICING POLICIES

by S. Laimon,
Associate Professor of Accounting,
University of Saskatchewan,
Saskatoon, Sask.

If the cost accountant is to contribute most effectively to pricing policy, he needs an understanding of the complexity of pricing problems, an appreciation of the importance of pricing factors other than cost, and an awareness of the limitations of traditional cost analysis for pricing purposes. With an intimate knowledge of the factors that are touched upon in this article and a willingness to prepare reliable cost forecasts, he is destined to play an increasingly important role in this vital area of managerial decision.

PRICE-MAKING is one of management's most important tasks, for the success or failure of an enterprise may largely depend on the ability of its management to set the right price for its products. It is a difficult problem, and a successful price-maker needs a knowledge of economics, an understanding of markets, a familiarity with distribution techniques, and a grasp of relevant cost facts. Because of the need for relevant cost data, the cost accountant can play a very important part in determining his company's pricing policies. To do so, however, he needs a clear understanding of *all* the considerations that should enter into a realistic pricing policy. He must have a keen awareness of the limitations of traditional cost analysis for pricing purposes, and he must not put himself in the vulnerable position of claiming for his cost estimates a greater role than they should play in price determination.

The scope of the pricing problem is vast. Lifetimes have been spent and volumes written delving into all its issues, and still there is no easy, pat, or universally acceptable answer. A complete study of the myriad aspects of pricing would involve all the forms or types of competitive conditions, and all the long-run versus short-run demand and supply considerations and implications for each of the forms. It would also involve a differentiation between analysis for pricing for an industry as a whole versus other industries, and for the individual firms within an industry.

Therefore, let us concentrate on the pricing problems of the individual firm. This orientation, for purposes of dealing with cost analysis, will permit the exclusion for the most part of industry-wide considerations, and long-run total demand and supply considerations. Because the long run is made up of a series of shorter runs, it is justifiable to say that the individual firm lives in, and is primarily concerned with, a series of intermediate and short runs.

Also, these remarks will be limited to those forms of competition in which each firm has some descretion over the prices at which it offers its products for sale. It is

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Born in Kamsack, Sask., Prof. Laimon graduated in 1949 from the University of Saskatchewan with a B.Com. degree. He then attended the University of Western Ontario's Graduate School of Business Administration, where he received his M.B.A. Following several years of business experience with firms in Ontario, he was appointed Assistant Professor of Commerce, College of Commerce, University of Saskatchewan in 1953. From 1956-60, he completed course requirements for a Ph.D. degree at the University of Chicago's Graduate School of Business while holding a full-time instructorship in accounting. Upon graduation, he returned to the University of Saskatchewan, College of Commerce, as an Associate Professor of Accounting.

only where individual discretion of this kind exists that cost and cost analysis can be a relevant factor in the setting of prices. In all other cases, such as the production of grains, livestock, and timber, the controlling factor in price determination is the size of the total supply and the state of demand. Except as it influences supply, which often is only remotely and indirectly, cost is not a factor in the short-run price movements affecting such products. They sell for what buyers will pay, irrespective of what they have cost the producer.

KINDS OF PRICING PROBLEMS

On the other hand, when a firm does exercise some control over its selling prices, it encounters a number of different pricing problems including[1]:

1. The determination of a basic price for its product line, whether it be for existing products or for new ones.
2. The determination of price differentials for the various models and types within the line.
3. The determination of the structure of price differentials and discounts for differing conditions of sale—e.g. for different quantities, geographic areas in which sales are made, uses, distribution channels, etc., and
4. The determination of price for special orders and for other special or temporary conditions in which the firm may find itself.

In seeking answers and solutions to all of these pricing problems, cost does have an important role to play—BUT—not as important as claimed by some, and certainly not in the manner in which it has been commonly used.

SETTING THE BASIC PRICE

The basic price for a single-product firm is a price benchmark from which price differentials and discounts for differing quantities, locations, distribution channels, etc., can be determined. For a multiple product company, the basic price is less definite. Nevertheless the price of the basic or prototype product serves as a benchmark for model variants or differentials among a group of closely-related products as well as for the various kinds of price discounts.

Cost-plus pricing. An example of this is the manufacturer who sets or quotes a basic selling price for his product after pondering on the problem in the following manner. He starts with the existing costs of direct materials and direct labor, and to these he adds a percentage for overhead based upon his prevailing rate of overhead application. To this so-called total of production cost he will add, again based on past or current experience, some percentage to cover selling and administrative expenses. And finally, he will add a "normal" or "fair" profit percentage to his estimate of the full cost of making and selling the product, and—presto!—he has his selling price.

When a manufacturer follows this procedure, he is making use of a cost-plus

[1]A substantial portion of the analysis that follows was derived from and based on the writings of Joel Dean. See, for example, the following of his publications:
(1) "Pricing Policies and Cost Analysis," *Conference Proceeding, 1949,* National Association of Cost Accountants (New York: N.A.C.A., 1949), pp. 27-38.
(2) "Cost Forecasting and Pricing Policy," as contained in *Readings in Cost Accounting, Budgeting, and Control,* edited by W. E. Thomas, Jr., for the American Accounting Association (Cincinnati: South-Western Publishing Company, 1960), pp. 385-98.
(3) *Managerial Economics* (Englewood Cliffs; Prentice-Hall, Inc., 1951), Chapters 7-9, pp. 395-548.

formula in his pricing, and he is following what is perhaps the most common method of setting prices in many companies. A "fair" profit will usually mean a fixed percentage of mark-on to total estimated cost. Cost as usually defined will be fully allocated cost that has been determined in various ways. Actual cost, normal cost, standard or estimated cost bases will have been used. Actual cost means the historical cost for the latest period, and it reflects wage and materials costs and overhead application based on current output and price levels. Normal cost differs in that it allows for overhead absorption based on a "normal" rather than the actual current rate of output. Standard and estimated costs need no explanation here. Occasionally, the cost base that is used may be purely conjectural, as sometimes happens in the pricing of specially-designed products. This cost base will have been built up or synthesized from engineering estimates and past cost experiences that are projected as applicable to future operating conditions and products.

Reasons for use of cost-plus pricing. If manufacturers are asked why they use a cost-plus method of pricing, several conflicting explanations may be advanced:

1. Some will say that they do not really use it—that they only start with it, and then proceed to make adjustments to the price so derived in order to take into account competitive conditions. One can question why they need use it at all if they know what the selling price should be.

2. Others will admit that setting prices by a cost-plus formula is not the logical way to maximize profits in the short run; but since maximizing profits is not really their company's objective, they hold that cost-plus pricing is not really illogical at all. It allows a "fair" profit, and, therefore, for a "just" price. The notion of a "just" price is strong in business moves and certainly has placed in jeopardy the maximization of profits—in both the short and long runs—as the single or even principal objective of most business enterprises. Certainly it cannot be denied that compunction against charging more than a "fair" profit margin is a significant pricing factor.

3. Still others will defend cost-plus pricing on the grounds that, notwithstanding its failure to maximize profits in the short run, it is the logical way to maximize them in the long run. Their defence is based on the view of classical economists that in the long run selling prices tend to equal the costs of production plus a normal profit. What these executives fail to realize is that this theory states a tendency that is valid only under the idealized conditions of pure or perfect competition that are only rarely approximated today—and certainly not for manufactured products. These same executives may also base in part their defence of cost-plus pricing on the theory that pricing up to the levels justified by current or short-run demand will encourage and pull in potential competition. It is difficult to generalize on the validity of this claim, because the pull of high prices and high unit profits differs between industries depending upon the financial and other barriers to entry of new firms, upon the prospects of great growth in total demand, and upon the prospective economies of scale and technology.

4. A fourth justification offered by executives will be that cost-plus pricing is sometimes the safest course of action. These executives may have different aspects of safety in mind. One aspect relates to the pricing of a new, made-to-order product. Cost-plus pricing for this kind of product may set what amounts to a refusal price that prevents the seller from tying up his facilities with work that yields subnormal

profits or even losses. In this respect, however, it should be noted that the protection to the seller is negative and incomplete. Formula pricing may keep the seller from losing money by getting unprofitable orders, but it will not prevent him from losing money by failing to get profitable ones. It thus sets ceilings on total profit, but not floors.

A second aspect of safety relates to the unknown reaction of rivals to a newly-set or quoted price. The reasoning is that when products and production processes of rivals are highly similar, cost-plus pricing may offer a source of competitive stability by setting a price that is more likely to yield acceptable profits to most other members of the industry. Cost-plus pricing may, therefore, reduce the hazards of price warfare. The assumption is, of course, that the costs and standards of acceptable profit are fairly similar, or compensatingly different, among all the competing firms.

Again, when the executive defends cost-plus pricing as the safest course of action, he may be referring to good public relations and political safety—i.e., to customer goodwill, and, if not freedom from governmental investigation of pricing such as the drug and farm machinery industries are presently enduring, at least an available defence of a "fair" profit only. This aspect of safety is particularly relevant in inflationary periods for large firms whose profits are conspicuous, and around whose prices are clustered the prices charged by competitors.

5. And last, but certainly not least, is a fifth explanation for the use of cost-plus pricing. It is used because many of the key factors that should be taken into account in setting prices are not known. Executives who tender this argument admit to the shortcomings of cost-plus pricing; nevertheless they resort to it in the face of ignorance about relevant price-setting considerations such as: the impact of price on sales volume, the reactions of rival sellers to a given price policy that may have a pronounced effect upon sales volume, and, the effect of today's price on tomorrow's demand and potential competition.

All of these are, admittedly, difficult to estimate or forecast with any precision. And, therefore, when faced with the necessity of guessing at almost every fact that should enter into scientific pricing, many executives will take refuge in the pseudo-certainty of a price that is determined by adding an arbitrary mark-on to a cost total that is "known", but not always relevant.

Inadequacies of cost-plus pricing. Unfortunately, the popularity of the cost-plus method does not necessarily mean that it is the best available method of pricing. In fact, in most situations it is the wrong approach to the pricing problem for several reasons:

1. It ignores demand; i.e., it fails to take account of the buyers' needs and willingness to pay. These are the things that govern the sales volume obtainable at each of a series of prices; and what people will pay for a product bears no necessary relationship to the costs incurred by the manufacturer.

2. It involves circular reasoning because the unit cost of a product depends on volume, but sales volume depends upon the price charged.

3. It fails to reflect competition adequately, and thereby ignores or neglects a number of important matters. Buyers' alternatives in the form of substitute products are omitted from consideration, and the effect of a price on rivals' reactions, together with its effect upon the entry of potential competition, is certainly neglected if not ignored completely. For products that are intensively competitive, a pricing formula

tends to cut off potential profit at the top of the product line and to cut off potential sales and profit at the bottom of the line. Thus, a pricing formula is in a sense, as Joel Dean has put it, a two-edged sword for restricting profit.

4. It relies too much on historical costs and accepts them as being precise and accurate. The fact is that in multiple-product firms, the cost of the individual products cannot usually be determined exactly because of the nature of allocating common costs, e.g., overhead, to the various products. As often as not, equally defensible bases of apportionment of common costs yield significantly different product costs. Hence the figures on full costs used in the formula are generally less exact, even as history, than they appear to be.

5. In addition to the lack of precise measurement of cost because of the method of common cost allocation, a pricing formula usually concentrates on concepts of cost that are frequently irrelevant for pricing decisions. It is economic costs rather than historical accounting costs that are germane for pricing. That is to say, it is future costs, not current costs, and certainly not past costs, that are needed for the proper role of costs in setting prices. Also, for many special pricing decisions in the short run, it is incremental or variable costs, rather than full costs, that are appropriate.

Other important considerations in pricing. It should be clear enough from the foregoing that cost is by no means the only consideration in realistic pricing. Cost reflects only the viewpoint of the seller, whereas a sound approach to pricing must take into account the viewpoints of the buyers and other sellers as well. The dominant factor in pricing should be to estimate the effect of price on sales volume. This involves demand analysis which for most products is the hardest technical problem in price determination. It also involves an investigation and evaluation of the competitive environment.

These important considerations indicate that mechanistic formula pricing is not the best way to use costs in pricing; but they by no means negate the need for and use of cost analysis in the solution of pricing problems. Let us now examine the proper role of costs in pricing.

The role of costs in pricing. As mentioned previously, the dominant factor in pricing should be to estimate the effect of price on sales volume. The effect of any proposed price on buyers' actions and attitudes, on rivals' reactions, and on potential competition, must be carefully considered in this respect. Cost estimates, per se, play only a secondary, facilitating role. Their valid uses can be roughly classified into four groups:

1. To measure the effects of alternative prices on profits.
2. To guess what buyers and actual and potential competitors will do in response to a proposed price.
3. To tailor a product to fit a predetermined selling price.
4. To justify a course of price action already decided upon.

Though these four uses are in descending order of importance, they will be dealt with in reverse order.

Let us therefore first examine the role of cost to justify a course of price action already decided upon. Examples include justifying prices before regulatory commissions and convincing customers that a price rise was "necessary". Undeniably, costs have become a sort of social conscience in pricing. This notion springs from the doctrine of classical economists that price tends to equal the cost of production

under conditions of perfect competition. Because these economists have used the ideal of perfect competition as a criterion of desirable cost behaviour, cost has grown to perform a normative function. It was first used in public utility regulation wherein full cost plus a fair return on capital was used, and where applicable is still used, as a regulatory standard of the prices to be charged. This public-utility thinking has been carried over into business generally, in a distorted form, in the practice of basing price on full cost plus a fair profit. But an aggregate earnings standard and a unit margin standard are not the same thing at all. The former is a risky standard to use for practical price-making. It yields a price that a seller perhaps "ought to get", but not one that he can necessarily get. If cost is to be used as a social conscience, it is not "actual" costs that should be used, but rather, the *expected* replacement cost of the most efficient producer.

Now let us examine the use of cost to tailor a product to fit a predetermined selling price. In this case the relation of cost to selling price is inverted. It involves starting with a target selling price and working backward by first deducting the estimated retail and wholesale margins, then deducting the manufacturer's desired profit, and finally selecting the components whose cost must not exceed the uncommitted balance of the retail price. This inverted relation of cost to price forms the basis for product development for many firms, e.g., chemical producers and automobile manufacturers.

Although this approach is applicable only in limited situations, it does provide an important pricing lesson for most manufacturers. It starts with market price realities and views the problem from the viewpoint of what buyers want and will pay for. Also, it views the seller's costs as susceptible of reduction—not as fixed and unchangeable. And finally, it views the product, not as inflexible in its qualities and specifications, but as something that can be molded and modified to satisfy specified consumer wants. In summary, it helps to clarify the fact that price is a ratio having a stated number of dollars in the numerator and the value of a bundle of economic utilities or benefits in the denominator, i.e., that price is a ratio of dollars per thing. Unfortunately, we fall into the habit of thinking of price only in terms of the dollars stated in the numerator of the ratio, even though we know that competition can be carried on just as much by altering the denominator of the price ratio, i.e., by altering the quality and other characteristics of the product involved. The five- or six-cent chocolate bar is a classic example of this.

We can turn now to the practical uses of cost estimates as an aid in guessing what people will do in response to a proposed price. This is imortant because the reactions of buyers, rival competitors, and potential rivals can have a significant influence on the volume of sales to be expected from a proposed selling price, and therefore also on the profits to be earned.

The first use we have here is in reference to certain types of producers' or capital goods, and it involves estimating the demand for such products by making an analysis of users' probable cost savings. The demand for capital goods is largely governed by the way the product affects the buyer's costs. Hence the selling price should be geared to buyers' alternative costs by estimating the amount of cost savings to the various types of potential customers from using the product. The emphasis in setting the selling price must be, not on the seller's costs, but on the buyer's costs of using the product as compared to his use of alternative products or methods of production.

Cost analysis can also be useful in guessing rivals' reactions to a proposed selling price; but for this purpose it is the competitors' probable costs of supplying the product that are more relevant than the seller's costs. The seller's costs can only serve as a point of departure in estimating the costs of competitors. Nevertheless, the seller can translate his cost figures into estimates of competitors' costs if he knows the cost structure of his industry and the technology and size of his rivals' plants.

As for the entry of potential competition and expansion of the number of firms in the industry, the seller must bear in mind that he can price competitors into his market as well as pricing himself out of it. And here again, cost estimates are useful in guessing the effect of price on unborn competitors. What is necessary here is to try to estimate or project the costs of the potential competitors, and then price at levels that encourage them to stay out of the market rather than enter it. For example, stay-out pricing has been an important aspect of the pricing philosophy of many producers of automotive parts and accessories as a means of discouraging car manufacturers from producing the parts themselves. To establish stay-out prices, the seller can look to his own average costs only if they are really the best estimates he can make of the potential competitors' costs. However, this may not be the case, since the costs of existing plants are sometimes significantly higher than those of new entrants with the newest kinds of equipment and up-to-date technology.

By far the most important role of cost analysis is to measure the effects of proposed prices on profits. Such measurement assumes, of course, that estimates have previously been made of the total sales volume to be expected at different prices. The cost estimates are then an essential element in choosing between the proposed selling prices, since they make it possible to project and compare the profits from alternative price-volume combinations. This is done by drawing up comparative operating budgets that show the probable earnings that will result from each potential price under consideration. And to get these comparative budgets, cost projections must be made about the effects on cost of proposed rates of output, plant size, technology, changing price levels, and so on.

In short, the essential role of cost analysis in pricing is based on the cost-volume relationships that can be expected. Given an estimate of the volume of sales that can be made at different prices, a determination of the costs that will exist at these volumes helps to make the subsequent choice of the most desirable selling price much easier to make.

There is no wish to convey the impression that the solution to the problem is simple. Difficulties will beset the price setter and the cost accountant on all sides. Determining what sales volume can be expected at the various selling prices under consideration is a matter of analyzing all aspects of demand. This is in itself a mammoth-sized job involving all sorts of difficulties and complexities. However, and perhaps fortunately, it is beyond the scope of this paper. What we are concerned with here are the estimates of costs at the various levels of volume that have been predetermined. And it is the problem of making reliable estimates and forecasts of cost that will now be discussed.

Cost forecasts are very essential. The fact that they may be subject to some estimating error does not destroy their usefulness. It is impossible for management to escape guessing about future costs when it makes a pricing decision. The choice lies between forecasting explicitly or adopting the head-in-the-sand viewpoint of an

ostrich. No careful forecast can be as inaccurate as the tacit assumption that current costs will continue indefinitely. Yet that is exactly the assumption made when price decisions are reached on the basis of "actual" costs.

Good cost forecasting starts with the knowledge that there are a variety of cost concepts, each useful under some circumstance and for some purposes, but very misleading or worse under others. Effective use of costs for setting prices requires a clear understanding of the principle of different costs for different purposes. The concepts or classifications of cost that are relevant for price policy decisions, and about which basic distinctions must be made include:

Production vs. Selling Costs. For purposes of price setting, these two kinds of cost should be treated quite differently. Production costs are the costs of *handling* the business obtained, whereas selling costs are the costs of *obtaining* the business. The unit amount of the former may go down as volume is increased, whereas the unit amount of the latter is likely to go up. A distinction between production and selling costs is especially essential in the case of setting price differentials for product models within a line, and for determining the structure of price differentials for the differing conditions of sale.

Economic vs. Accounting Costs. A distinction must also be made between reported accounting costs and true economic costs. The economic concept of cost should control in price setting. Because of the inflation we have experienced since the 1940's, accounting costs have tended to understate real economic costs, and accounting profits have overstated real profits. Conventional accounting procedures have required that materials and depreciation be charged to production at original cost, not at a higher replacement cost. As a result, raw material inventory and plant and equipment are revalued as they are turned over. Unlike other accounting revaluations which may usually be adjusted directly to retained earnings, and can therefore be kept out of current profit computations, the revaluations of inventory and fixed assets do become part of the reported profits because they enter into the valuation of finished goods. In an inflation period the charges to product for materials and depreciation, and subsequently to cost of goods sold, are lower than the replacement costs of the materials and fixed asset items. This will be true even if LIFO is followed for inventory costing and accelerated depreciation for fixed asset amortization, because both of these procedures are, after all, applied to original costs. Yet for pricing decisions it is real economic costs and profits that are relevant. This does not necessarily mean that accounting procedures must be changed to reflect economic values, but it does mean that separate estimates of real costs and real profits must be provided for pricing decisions.

Future vs. Current or Past Costs. Closely allied to the economic vs. accounting cost concept is the future vs. current or past cost concept. It is future costs, not current or past costs, that are germane for most price policy decisions. This is so because as a practical matter there are impediments to frequent changes in price. Also, it takes time for the full volume effects of a chosen price to be felt. Therefore, a basic price, decided upon today, is likely to far outlast the conditions that determine today's costs. Consequently, it is forecasts of tomorrow's costs, i.e., of future costs, that are needed. In this connection, one author has stated that "accounting figures are a blessing in that they provide a means of expressing the ebb and flow of a business, but that they are also a curse in that they imply an air of accuracy and

finality that is misleading." Thus the current cost of a product should not be taken literally for current pricing purposes.

Many different forces will determine what the future costs will be, and the functional relationship of cost to each major force can provide the basis for the various cost forecasts that are useful for pricing decisions. For example, the rate of output that will be required for the volume anticipated will affect the total level of cost to be incurred. Similarly, the lot size, i.e., the number of units in a production or distribution lot, will affect cost. The size of the plant, i.e., the total capacity to be provided, will affect total cost. The relationship of cost to all of these should be taken into account in estimating future costs. And care must also be taken to estimate future wage rates, and price levels for materials and overhead items. It is replacement costs, not costs historically incurred, that are needed.

Especial care, however, must be exercised in incorporating depreciation provisions into cost estimates on the basis of future replacement costs. Unless such replacement is actually anticipated, it is possible that an inflated depreciation provision will lead to unrealistic estimates of future cost. The reason for this is that the utilization of low-cost facilities often involves high operating and maintenance costs. If these costs and inflated charges for depreciation are all allowed for in future cost estimates, a duplication of costs may result.

Actual vs. Standard Costs. In respect to the actual cost or standard cost concept, either one can be used as the basis for forward estimating. But it must be emphasized that obsolete standards are just as weak for estimating future costs as are historical actual costs. Unit costs developed under a standard cost system must be adjusted for recurring variances and expected future variance unless the established standards include allowances for unavoidable departures from standard performance. In this connection, the only safe springboard for estimating future performance is the record that management has proved by past demonstration that it can actually accomplish.

Fixed vs. Variable Costs. We come now to a distinction between costs that is most essential in building up the estimates of future costs, and that is for that matter, the very foundation of good cost evaluation and cost control even of past or current levels of cost incurrence. It is the distinction between fixed and variable costs. In reference to pricing, the flexible budget approach must be adopted with future rather than current cost levels substituted in the estimates; and a distinction between the cost behavior of these future costs in relation to the various proposed levels of output or volume is essential to the preparation of such a budget.

Essential as this distinction or breakdown of costs into their variable and fixed components is, let us recognize right now that it is impossible to derive a clear and absolute distinction. Every cost is a variable cost, and every cost is also a fixed cost over some range of activity. The only difference stems from the degree of movement within the range. Given a large enough change in the level of output, the level of fixed costs will display some variability. This is especially true when the change in the level of activity involves moving to a larger plant, or to a new set-up of machinery, or to a new layout.

Also, even within the relevant or normal range of activity, certain costs behave in step fashion. These semi-variable or semi-fixed costs jump at certain crucial points and are merely smaller editions of the broad-scale fixed costs. Step costs of this kind are an especial plague of cost accountants, and it is almost sheer folly to attempt to

impart to them a clear pattern of fixed and variable properties.

Even so-called variable costs have their own little step-patterns. Raw material and direct labor costs are acquired and applied in units that are at least theoretically unreducible. One more unit of such costs, however small, is still a step in the cost pattern. It is only because a pragmatic purpose is served in respect to cost control and product costing that we arbitrarily and conveniently assume certain costs to be fully variable in nature.

Further difficulties also manifest themselves when we consider ranges of time. Given sufficient time, any cost is variable; and given a short enough time interval, every cost is fixed. Another point to ponder in this respect is whether all fixed costs do in fact relate to periods of time rather than to units of product. It is not completely demonstrable that they do. Charges for insurance, taxes, maintenance, and depreciation are commonly treated as relating to periods of time. But this may be largely a matter of convention and convenience. The cost of facilities usage might be just as logically apportioned to units of output as to periods of time. Either basis is arbitrary and largely theoretical.

The difficulties do not cease here. Production on any sizeable scale entails not merely the conduct of processing operations within the so-called production departments, but also the performance of numerous auxiliary functions of an independent character. Referred to here are the activities of service departments. Each of these service activities may entail variable and fixed costs—variable with the service performed by it, or fixed in relation to it, but not necessarily bearing a similar relationship to the output of any production centre or product item. Meaningful and informative classification of such costs into fixed and variable components of production and product cost may become very intricate and puzzling.

Direct vs. Indirect Costs. In reference to the direct vs. indirect cost classification, one comment only will be made. To the extent that costs can be identified more directly with processes and products, the easier it will be to derive a meaningful dichotomy of costs into fixed and variable components.

So many of the difficulties and pitfalls of which to beware when trying to estimate future costs have been indicated that there may be some question of their ultimate usefulness. Therefore, it may bear repeating that no careful forecast can be as inaccurate as the assumption that current costs—and current cost conditions—will continue indefinitely. Nor need the degree of error in the forecast be large if the cost accountant with ability applies himself conscientiously to the task. He can provide quite reliable estimates of future costs based on all the factors involved if he does a thorough job of cost research. He will have to gather a store of factual information about the plant, the products, the production operations and processes, the physical standards of performance, the distribution methods, and the composition of the various cost, inventory, and fixed asset accounts involved. Only when he is familiar with all of the operating characteristics and data, can the cost accountant estimate future cost reliably.

SETTING THE STRUCTURE OF PRICE DIFFERENTIALS

From the setting of a basic price, we now turn to the role of cost in reaching decisions on the structure of price differentials between the various models and types, i.e., the product variants in a product line, and for the pattern of price

differentials and discounts established to reflect differing conditions of sale. Most pricing problems in this area involve a *change* in existing price differentials, rather than the creation of entirely new ones. Therefore, here it is incremental costs that should play the controlling role. They make it possible to compare the additional revenue resulting from increased volume obtained by allowing price differentials with the resulting additional cost. As a result, they make it possible to choose the structure and combination of price differentials that maximize the incremental contribution to overhead and profits.

Joel Dean has classified the kind of price differentials that present practical pricing problems into nine different types. They are:

1. *Quality differentials,* e.g., standard vs. deluxe models of a product, or regular vs. "fighting" brands.
2. *Size spreads or differentials,* e.g., three-ton vs. five-ton trucks.
3. *Use differentials,* e.g., milk for drinking vs. milk for cheese-making.
4. *Load-factor differentials,* e.g., morning movie prices and off-peak electric rates.
5. *Trial discounts,* e.g., introductory subscriptions to magazines and to services.
6. *Style cycle progressions,* e.g., book edition differentials and merchandise markdowns.
7. *Quantity discounts,* e.g., order-size discounts and package-size differentials.
8. *Distribution channel differentials,* e.g., wholesale vs. retail prices, or private brand vs. house brand differentials.
9. *Geographical differentials,* e.g., zone pricing, basing point pricing, etc.

Further analysis of these types indicates that they can be broken down into three distinct classes. The first class includes price differentials relating to variations of the product. It includes quality differentials and size differentials. For these, incremental cost analysis emphasizes differences in production costs of the various models and types. The second class includes those price differentials established primarily to increase the total sales volume of a given product. These consist of the use differentials, load-factor differentials, trial discounts, and quantity discounts for larger package sizes. Incremental cost analysis for these must emphasize difference both in respect to production costs and selling costs. The third class includes the price differentials reflecting differences in the costs of making sales, and they consist of distribution channel differentials, geographical differentials, and quantity discounts for larger-size orders. Incremental cost analysis for these is concerned primarily with selling or distribution costs.

Pricing product variants. Let us examine first the price differentials to be established for the various models, types, and sizes of a product.

In pricing the product variants, the problem is to fix the relationships of prices among them. Here questions like the following must be asked: What product variants need to be priced in relationship to each other, and what kinds can be priced independently? In principle, only those product variants whose demands are importantly inter-related need be considered together in pricing. A relationship between them on the cost side, through common production or distribution processes, has no bearing here. The common costs reduce the accuracy of estimates of the costs of the individual variants, but they should not affect the relation of their selling prices. Thus, jointly-produced product variants should be priced independently unless they are related in demand. Demand inter-dependence includes variants that are similar

in use, and hence are potential fringe substitutes. It also includes variants that complement one another in use or in the seller's market strategy.

A common way of setting the price of such related product variants is to estimate the full costs, including overheads, of each and apply a uniform percentage mark-up. This is easy and definite, but it is usually not the best way to price them. The various qualities, sizes, editions, etc., of the product are likely to tap market sectors differing in demand elasticity and in competitive intensity. These demand differences, and not cost differences, should be the controlling factors in determining price differences.

A constructive approach to problems of this type is to view the product variants as opportunities for market segmentation in order to tap added markets and to separate sectors of the market which differ in demand elasticity. For example, multiple editions of books are a means of successively exploiting more and more elastic sectors of the market. If viewed in this manner, the technical problem of product line pricing is to obtain the most profitable degree and kind of price discrimination.

Relevant considerations for setting product price-differentials include:

1. Relative buyer-benefits obtained from the product variants, i.e., the use value in different applications and sections of the market.
2. The degree of competitive superiority of the manufacturer's product.
3. The intensity of competition.
4. The comparative elasticity of demand of the market segments tapped by each of the product variants.
5. The cross elasticity of demand among the product variants.
6. The future revenue consequences upon customer goodwill. Prices that are proportionate to sellers' allocated costs are sometimes thought to have desirable effects upon buyers' goodwill.
7. The promotional effects of introductory model pricing, e.g., loss leaders, introductory subscriptions, etc.
8. The effects upon profits of alternative schedules of price differentials. These are best studied by the effects on the total contribution to overhead and profits.

From this list it must be apparent that the role of cost estimates in product line pricing should be a secondary one. Their most important job is, just as it is in the setting of a basic price, to help project the effect on profits resulting from contemplated product price-differentials. Estimates of *total* cost before and after changes in the selling price relationships, together with comparable estimates of total sales revenue, before and after, are needed for this job. And the impacts upon total costs of more sales or less sales of the product variants can be most practically projected by using the *incremental* costs of the product variants, not their existing average unit costs.

Incremental cost also has other important uses here. It can be used as a bench mark for finding the best pattern of market segmentation and price discrimination. The spread between incremental cost and selling price represents the contribution of the product variant to overhead and profits. This spread should be studied in measuring the profit effects of alternative prices and in deciding upon additions and deletions to the product line. Hence, incremental costs play a very strategic role in maximizing this marginal contribution by price structure decisions.

Where common overhead costs are important, incremental costs can often be approximated by using traceable costs. As mentioned before, the allocation of over-

head costs to individual products is quite arbitrary and is subject to wide error. Moreover, many of the overhead items may not vary with output, and hence may have no short-run marginal costs. Therefore, orthodox allocations of these overhead costs may often be more misleading than useful in estimating incremental costs.

The use of marginal costs in the profit analysis certainly does not imply that the product selling price should be *equal* to incremental costs. Nor does it mean that selling prices of related products should be *proportionate* to their marginal costs. The margin between selling price and incremental cost should normally differ among related products. And these differences should not be determined only through cost analysis. Instead, they should be governed by the demand and competitive considerations already mentioned. When they are so governed, the estimated incremental cost serves as a practical economic standard in that it sets a minimum price, it serves as a valid point of departure for demand pricing, and it provides an efficient vehicle for tracing the effects of different prices on total costs and profits.

Establishing Other Price Differentials. In dealing with the establishment of other price differentials, i.e., those in the second and third classes mentioned previously—and consisting of differentials established for use, load-factor, trial discounts, quantity discounts, distribution channels, and geographical location—essentially the same considerations are involved as for pricing product variants. The same segmentation of the total market and pattern of price discrimination is sought. The essential difference, it seems, is that, in the analysis of incremental costs for these differentials, the distribution costs involved, as opposed to production costs, assume much greater significance.

Inadequate attention and consideration has too frequently been given to these selling and marketing costs. While production costs have been given long and careful study, it is only in recent years that adequate recognition and more intensive study have been given to distribution costs. The growing awareness of their importance is certainly overdue, because distribution costs comprise a large percentage of all costs incurred—in fact, in many instances more than the production costs—and they must be adequately considered through incremental cost analysis when determining price policy.

Distribution may include any of all of the following activities: publicity, customer contact and solicitation, warehousing, display, order filling, delivery, customer service, market research, credit extension, and the related supervisory and administrative functions. Costs of such activities differ according to products, quantities, channels of distribution, locations, customers, and methods of sale. Such cost differences can vitally affect the price which will be most remunerative under the varying conditions.

A skillful price-setter must know accurately what cost variations are involved in the offering of goods under the widely differing conditions which may be encountered in a typical marketing program. For example, one product or product variant may differ from another in frequency of sale, rate of turnover, breadth of customer demand, etc. Also, the unit selling cost for large orders may normally be much less than for small orders. When the price-setter knows all these cost differences, he can make a more meaningful comparison of incremental revenue with incremental cost, and can then choose price differentials that more effectively approximate a maximization of profits.

PRICING FOR SPECIAL ORDERS AND SPECIAL SITUATIONS

Still to be dealt with is the use of cost analysis in solving the last of the kinds of pricing problems mentioned at the beginning of this paper. This is the question of pricing special, non-repetitive orders and pricing in special situations such as in periods of depressed business activity when profits are being squeezed or even eliminated.

From the foregoing, it should be clear that full, average unit cost, consisting of direct out-of-pocket costs plus an apportionment of variable and fixed overhead costs, is not the cost benchmark from which to proceed to set a selling price. The primary emphasis must be on the contribution the selling price can make toward covering fixed overhead costs and providing profits. Therefore, it is again incremental cost analysis, based upon a classification of costs into variable and fixed components, that is the relevant kind of cost analysis to use for pricing special orders and in other special situations. It is the differential cost of making and selling the product measured against the costs of not making and selling the product that is at issue here.

With reference to special orders, let us take a simple example. Assume that the normal sales revenue of a small plant is $120,000 derived from a sales volume of 100,000 units sold at $1.20 each. Assume also that costs of sales for this volume amount to $100,000, consisting of $50,000 variable costs and $50,000 fixed costs. Thus the normal profit is $20,000. Now assume that business conditions are such that only 70,000 units can be sold at the existing price of $1.20 per unit. Total sales revenue is now 70,000 times $1.20, or $84,000, and total costs of sales are $85,000, consisting of the $50,000 fixed costs plus 70,000 times 50¢ variable cost per unit, or $35,000. The company is suffering a loss of $1,000. Given these circumstances, should a special order for 20,000 units that will not affect existing sales be accepted at 90¢ per unit? At first glance the answer might appear to be a decisive "no", because even at normal volume the average cost is $1 per unit, and when only 70,000 units are produced and sold, the average unit cost exceeds $1.20. But new let's analyze the situation further. The incremental cost of accepting the special order amounts to 20,000 times 50¢ variable cost per unit, or $10,000, whereas the sales revenue to be derived from it amounts to 20,000 times 90¢ per unit, or $18,000. There is a total contribution of $8,000 to cover fixed overhead and provide profits; and the existing loss of $1,000 can be changed into a profit of $7,000. Therefore, acceptance of the special order appears to be desirable. The degree of desirability for any special order at a special price will depend upon the size of the variable costs in relation to the selling price. Any selling price in excess of variable costs will provide a contribution to overhead and profits.

A word of caution is, however, necessary here. Taken by itself, any order is desirable if its selling price covers variable costs and contributes something to overhead. But there must be some assurance that the order can be taken by itself. A low price on one order may involve low prices on others. The low price which lures an order away from a competitor may be cancelled out by some other order that his low price lures away. Too much cheap business may crowd out more profitable orders obtainable elsewhere, and the business might ultimately consist of orders which were individually desirable but collectively unprofitable.

On the other hand, it must not be assumed that a selling price below the variable

costs is always undesirable. Certain circumstances, some of them admittedly severe or extreme, may make sales at any price advisable. This will be true when the penalties of extreme price reductions on business done are less than the penalties of cost increases resulting from business refused. For example, if the costs of complete or even partial shutdowns of a plant and the subsequent resumption of operations are important, it may be more profitable to price below variable costs for a short period of time than to stop or interrupt production. As production has become more and more inflexible, the need for continuity of operations has become more pronounced. Shut-down, set-up, and start-up costs for short runs become prohibitive. Guaranteed minimum weekly pay rates may prevent savings from the layoff procedure once widely employed. Labor shortages and high training costs may make it essential to preserve a skilled labor force, even when profitable employment for all of it cannot currently be found.

Even more important than continuity of operations is maintenance of trade position—i.e., holding one's normal share of whatever business is available. For every regular article of commerce there is an established pattern of distribution which sellers do not want disturbed to their own disadvantage. Normally they will make substantial sacrifices to maintain it, especially where their products are differentiated and identified by brand names which must be kept before the public.

Howard Greer[2] has succinctly stated the problem of the seller as follows:

> For every seller, building up trade is a costly and difficult job. He must make his goods known to potential customers through advertising, publicity, promotion, and display. He must form acquaintances, create confidence, solicit orders, and establish a method of transportation and delivery. He must pave the way for repeat orders, provide customer service, and aid in secondary distribution. Eventually he has a heavy investment in this trade position, perhaps comparable in size with his investment in plant facilities.
>
> The position thus established is one not lightly to be abandoned, and an aggressive seller will defend it stubbornly. He is too conscious of the cost of "getting in" to let himself be pushed out again. To maintain his position he may have to make price concessions which appear unwarranted from a cost and profit standpoint, but this step may be cheaper in the long run than to let someone else take his place in the market and then try to win it back at some future date.

Closely allied to the maintenance of trade position is the establishment of trade position, and here we have a third circumstance that may make it desirable to sell temporarily at prices below variable costs. Even when business is good, sellers may offer a price less than their marginal cost as a means of obtaining a "first order" that will, it is hoped, open the door to getting more profitable business from the new customers at a later date.

CONCLUSIONS

Although many other aspects of cost analysis in relation to pricing policy deserve consideration, space will not permit their inclusion here. In conclusion, then, the most salient points are, in summary:

[2] Howard C. Greer, "Cost Factors in Price Making," as contained in *Readings in Cost Accounting, Budgeting, and Control*, p. 382.

1. Cost estimates do not play the dominant role in pricing decisions. The most important considerations are customers' demand and reaction of competitors.
2. There is, nevertheless, a valid and important role for cost in setting basic prices and in determining price differentials, etc. This role does not consist of the use of a cost-plus pricing formula, but, rather, of projecting the effects of proposed prices upon real and accounting profits. This role is achieved by studying cost-profit-volume profit relationships.
3. Effective use of costs for setting prices requires a clear understanding of cost concepts and of the principle of different costs for different purposes—e.g., future vs. past or current costs, full costs vs. incremental costs, etc.
4. If the cost accountant is to make the most of his opportunity to participate in price policy, he needs an understanding of the complexity of pricing problems, an appreciation of the importance of other pricing factors than cost, and an awareness of the limitations of traditional cost analysis for pricing purposes. Given these points of enlightenment and a willingness to research the operating data adequately in order to prepare reliable cost forecasts, the cost accountant is destined to play a more and more important role in this vital area of managerial decision.

For further reading

THE ACCOUNTANT'S CONTRIBUTION TO PRICING POLICY, by D. R. Patton, *Cost and Management*, Nov. 1960.

PRICING AND THE COST ACCOUNTANT, Australasian Institute of Cost Accountants, *AICA Cost Bulletin*, May 1960.

MULTI-STAGE APPROACH TO PRICING, A. R. Oxenfeldt, *Harvard Business Review*, July-Aug. 1960.

PRICE ANALYSIS FOR RECOMMENDATIONS TO MANAGEMENT, by Charles B. Allen, *N.A.A. Bulletin*, July 1960.

The Editor's Choice

SMALL BUSINESS
Advanced Management, March 1961.

There are six short articles in this issue devoted to the cause of the small businessman. The first article provides statistics and assesses the importance of the small business to society; the second article deals with the resistances of small business entrepreneurs to scientific management principles; the next article examines growth factors; the final two articles cover objectives of management and the development of proper relationships between worker and supervisor.

IS THE ROLE OF THE CONTROLLER SHRINKING?
by J. T. Garrity, The Controller, May 1961.

This article begins by stating the concept of controllership outlined by the Controllers Institute. The author agrees that this statement conforms to what the controller should do but, in practice, he believes that the controller's job is something less than it was ten years ago. The author believes that many companies have created executive positions that have taken over many of the controller's important duties. The reasons for this lesser role are: 1) controllers have not been doing their job; 2) the job has expanded and the controller has not kept pace; 3) controllers have taken the wrong approach to meeting management's needs.

FLEXIBLE COSTS FOR PRICING DECISIONS
by M. Backer, N.A.A. Bulletin, May 1961.

In this article the author first makes a short analysis of the pricing function. He states that, since pricing is influenced by a multitude of factors that are hard to measure, policies are therefore vague. Because pricing has to be flexible in order to cope with many factors, cost data used to aid product pricing must also be flexible. An examination is made of pricing using full-cost, return-on-investment, and marginal costing methods. The author concludes that each method is useful under a given set of conditions and therefore cost information should be presented in a manner that will include all three. An illustration is given of what the author calls flexible costs.

INTERFIRM COMPARISON: WHAT IS COMPARED AND WHY?
by H. Ingham, The Manager, June 1961.

This short article is meant to explain the reason for the choice of certain ratios in interfirm comparison. In the February 1961 issue of *The Manager,* the author wrote an article on "The Value of Interfirm Comparison" which gave certain ratios but did not explain the choice. The author outlines the pyramid structure of ratios, which shows those sectors of the firm that are being run efficiently compared to other firms. This is an interesting commentary on ratios, but has limited use in Canada because of the lack of available comparative data between firms.

S.I.C.A. News

THE SOCIETY OF INDUSTRIAL & COST ACCOUNTANTS OF CANADA

INCORPORATED 1920

CONFERENCE AFTERMATH

The 40th National Cost and Management Conference has now been over for some months but many of the actions taken by the Board of Directors and the Co-ordinating Educational Committee at their meetings there will have important implications in the coming year.

One of the main steps taken by the Co-ordinating Educational Committee was to appoint a new sub-committee, the Curriculum Review Committee, under the chairmanship of D. R. Patton of Montreal, former chairman of the Co-ordinating Educational Committee. The function of this new committee will be to keep the R.I.A. curriculum under constant review, authorizing minor revisions and amendments or recommending major revisions to the parent committee as needed.

The Co-ordinating Educational Committee was also advised of the appointment of Barry Hicks, B.Com., C.A., Assistant Director of Extension, McMaster University, to take charge of the R.I.A. program. Mr. Hicks will submit recommendations for improvements in the correspondence course that are indicated as it meets the actual test of performance.

A major action taken by the Board of Directors was to authorize implementation of the graduate studies program on a test basis as outlined elsewhere in this issue. The decision to proceed immediately was made possible by generous grants from the Ontario and Manitoba Societies.

The Board also reviewed proposals put forth by the Educational Foundation and approved plans for a special study to be made to develop new problem material for assignments and examinations. Financed by the Educational Foundation, this study will involve engaging a university professor to develop the material.

In reviewing the report of the Publicity and Public Relations Committee, the Board authorized the preparation and distribution of a public relations manual for use in the chapters and provincial Societies.

Besides acting on the reports of some ten committees and transacting various other business, the Board of Directors aproved an amendment to the by-laws of the Society altering the composition of the Board itself. The new amendment will increase the number of directors-at-large from ten to 20, limit the number of past presidents on the Board to ten, and reduce each chapter's representation to one Board member. At present, the Board is composed of two representatives appointed by each provincial council, two to five representatives appointed by each chapter, all past presidents, and the ten members elected from the membership at large, for a total of 131 directors. The new measure is designed to keep the size of the Board within wieldy limits, to fix responsibility at the chapter level, and, by increasing the number of directors-at-large, to provide an ample body of able and experienced leadership for special projects.

CHAPTERS AND MEMBERSHIP

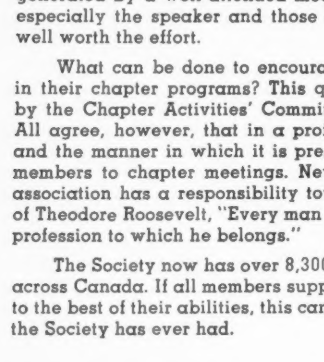
Another year of Society activities has begun and each chapter Executive, after many weeks of careful planning and effort, is hopeful that this will be the most successful season in the history of the chapter. After preparing a program for the benefit of all members, they look forward to the members' support and participation in chapter meetings.

The success of a chapter meeting is usually measured by the number of members present. While attendance is not the only standard for gauging the success of a meeting, nor necessarily the soundest, one certainly cannot ignore the "boost" generated by a well-attended meeting. It sparks enthusiasm and makes everyone, especially the speaker and those contributing to the program, feel the meeting was well worth the effort.

What can be done to encourage all members to participate as fully as possible in their chapter programs? This question has been given much consideration by the Chapter Activities' Committee and certainly there is no simple solution. All agree, however, that in a professional society, the chapter program itself and the manner in which it is presented are the most important factors in attracting members to chapter meetings. Nevertheless, each member of a professional association has a responsibility towards his fraternity. To use the oft-quoted statement of Theodore Roosevelt, "Every man owes part of his time to the upbuilding of the profession to which he belongs."

The Society now has over 8,300 members; these are affiliated with 32 chapters across Canada. If all members support their own chapter meetings this season to the best of their abilities, this cannot fail to be one of the most successful years the Society has ever had.

Alberta Society Appoints Secretary-Manager



A. L. Heggie, R.I.A.

A. L. Heggie, R.I.A., has been appointed Secretary-Manager of the Society of Industrial and Cost Accountants of Alberta. Mr. Heggie is the first full-time staff member to be appointed by the Province and all operations of the Alberta Society will henceforth be conducted from his Calgary office. Mr. Heggie, formerly employed with Calgary Ticket Bureau Ltd., has been Calgary registrar for a number of years and prior to that was active in the Saskatchewan Society.

The appointment of a full-time Secretary-Manager to handle its expanding operations is the natural outcome of the Alberta Society's rapid growth in recent years. The Society now has nearly 1,000 members, some 830 of them students. This is nearly double the student membership of 1955 when enrolment stood at 447.

The Officers and Directors of the Canadian Society extend their congratulations and best wishes both to Mr. Heggie and to the Alberta Society.

PERSONALS

DONALD C. DEIGHTON, R.I.A., has been appointed Administrator, Finance Division, Department of Defence Production, Shipbuilding Branch, Ottawa. Mr. Deighton was formerly Co-ordinator — Cost Analysis.

HENRY W. RAMBACHER, R.I.A., of the Niagara Chapter, has been promoted to Assistant Controller, Cost and Budget of Atlas Steels Ltd., Weland, Ontario. Mr. Rambacher was also awarded his C.P.A. certificate recently.

PETER D. THOMAS, B.A., R.I.A., was recently appointed Customer Accounts Manager of B.C. Electric Co. Ltd., Vancouver.

DONALD L. VICARY, a General member of the Society, has been appointed Industrial Relations Manager of Ford Motor Company of Malaya in Singapore.

OBITUARY

The Society of Industrial and Cost Accountants of Ontario announces with regret the death on May 18, 1961 of W. G. H. Jephcott, a Registered Member of the Toronto Chapter for many years. He was in his 63rd year.

Mr. Jephcott, a Chartered Accountant, was a partner in Touche Ross Bailey & Smart, Toronto. He was also a graduate of Osgoode Hall Law School in Toronto and was called to the Ontario Bar in 1929.

He was born in Montreal and educated in Westmount. In addition to being a Past President of the Institute of Chartered Accountants of Ontario, he was a member of the Board of Governors of the Canadian Tax Foundation from its inception and was Board Chairman in 1949.

The President and Directors of the Society extend their deepest sympathy to his wife and family.

PUBLICATIONS AND TECHNICAL SERVICES

Since the Society's first Special Study—"The Appraisal of Capital Expenditure"—was published in the fall of 1959, there has been a steady demand for copies of this work. Requests are still being received for this daily, and the publication is now in its third printing. A number of universities in Canada and the United States have adopted this as a text for their business courses and orders have been received from many countries of Europe and the Commonwealth.

Though it might be difficult to match the success of this first study, members will be pleased to know that another special study will likely be published before the end of this year. Four studies are presently in process of preparation, including studies on profit planning and control, cost accounting and pricing policy, and distribution costing.

The Society hopes to have one of these completed and in print by the fall of this year.

STUDENTS AND COURSES

Now that summer is drawing to a close, it is time once again to return to habits of study and the learning of new subjects. Across Canada, registrations will be accepted in many centres. It is important that you observe the registration dates. If you do not register before a set date, you will be penalized by having to pay a

late filing fee. If you have not registered before the deadline set down in your province, you will have to wait another year before attempting the course. It is a waste of precious time to be held back a year because of neglect in observing the registration dates. Make sure you are on time—register now through your provincial office or be on hand on your local registration nights.

Consider your status in the R.I.A. course and ensure that your choice of subjects is best suited to your progress. If in doubt about any point, you are invited to consult your provincial office or local registrar before enrolling.

EXAMINATIONS 1960
ADVANCED COST ACCOUNTING — PAPER I

QUESTION 4 (17 marks)

The Balance Sheet and Profit and Loss Statement of the Manufacturing Company Limited are shown below.

MANUFACTURING COMPANY LIMITED
Balance Sheet
December 31st, 1959

ASSETS

Current Assets:			
Cash in Bank		$ 247,910	
Accounts receivable	$ 916,700		
Less: Allowance for bad debts	45,800	870,900	
Inventories, at cost		1,000,000	
Insurance premiums prepaid		10,000	$ 2,128,810
Fixed Assets:			
Land		200,000	
Buildings, machinery and equipment	1,800,000		
Less: Accumulated depreciation	1,000,000	800,000	1,000,000
			$ 3,128,810

LIABILITIES AND SHAREHOLDERS EQUITY

Current Liabilities:			
Bank Loan		$ 800,000	
Accounts payable		500,000	
Accrued bonus payable		83,330	
Provision for income taxes		200,000	
6% serial debentures—installment due June 30th, 1960		100,000	$ 1,683,330
Deferred Liabilities:			
6% serial debentures, interest payable each June 30th and Dec. 31st		500,000	
Less: Serial maturing June 30th, 1960		100,000	400,000
Shareholders Equity:			
Capital Stock:			
Authorized: 1,000 Shares Common, no par value			
Issued and outstanding: 1,000 Shares		100,000	
Retained Earnings:			
Balance, January 1st, 1959	$ 500,000		
Net Income for the year	445,480	945,480	1,045,480
			$ 3,128,810

MANUFACTURING COMPANY LIMITED

Profit and Loss Statement

For the year ended December 31st, 1959

Gross Sales		$11,000,000
Deductions from sales:		
Sales returns	$ 330,000	
Freight out	120,000	
Sales Tax	550,000	1,000,000
Net Sales		10,000,000
Cost of Sales:		
Raw materials	6,000,000	
Direct labour	600,000	
Manufacturing overhead (Other than depreciation)	600,000	
Depreciation	200,000	7,400,000
Gross profit		2,600,000
Selling and administrative expenses:		
Selling expenses	900,000	
Administrative expenses	600,000	
Bad debts expense	160,700	
Interest	100,000	1,706,700
Profit before bonus and taxes		893,300
Bonus		83,330
Profit before taxes		809,970
Corporation income taxes—45%		364,490
Net profit		$ 445,480

The following information is provided for the budget in 1960:

1. There will be a general increase of 10% in sales prices effective Jan. 1st, 1960. Sales orders amounting to $600,000 and unfilled at the end of 1959 will, however, be shipped at old prices. No change in physical volume is expected.
2. Freight rates are expected to remain the same.
3. Sales returns are expected to be in the same proportion.
4. An advance of 10% in raw material prices is expected on **July 1st**, 1960.
5. It is expected that salaries and wages will increase 5% on **April 1st**, 1960.
6. Manufacturing overhead contains Fixed and Variable elements. In 1959, the Fixed portion was one-half, and included salaries and wages amounting to $200,000. One-half of the Variable portion consisted of salaries and wages, and the other half of supplies and services. Supply and service prices are expected to follow the same trend as production (raw) materials.
7. Sales and production rates are expected to be uniform throughout the year.
8. The Fixed portion of administrative expense was 90% of the total, and consisted entirely of salaries. The Variable portion is expected to increase 20% as of January 1st, 1960.
9. Selling expense consisted of salaries. Salaries were not affected by volume.
10. Interest is charged at the rate of 5% per annum on bank loans. No reduction in the bank loan can be expected.

11. Depreciation is taken at 20% per annum. The company uses the "diminishing balance" method.

12. Bad debts expense is computed on the basis of 1% of gross sales less returns.

13. The bonus is equal to 10 % of profits before taxes, but after returning 10% on shareholders' equity as of the beginning of the year.

14. Corporation tax rates are the same as in 1959.

REQUIRED:

Prepare the budgeted statement of profit and loss for the year ending December 31st, 1960.

Calculations should be made to the nearest $1,000.

SOLUTION 4

MANUFACTURING COMPANY LIMITED

Budgeted Statement of Profit and Loss for the year ending December 31, 1960

Gross sales		$12,040,000
Deductions from sales:		
Sales returns	$ 361,000	
Freight out	120,000	
Sales tax	602,000	1,083,000
Net sales		10,957,000
Cost of Sales:		
Raw materials	6,300,000	
Direct labour	623,000	
Manufacturing overhead (other than depreciation)	621,000	
Depreciation	160,000	7,704,000
Gross Profit		3,253,000
Selling and administrative expenses:		
Selling expenses	934,000	
Administrative expenses	632,000	
Bad debts	117,000	
Interest	67,000	1,750,000
Profit before bonus and taxes		1,503,000
Bonus		140,000
Profit before taxes		1,363,000
Corporation income taxes		613,000
Net profit		$ 750,000

(Note—Labour cost of $622,000 and Manufacturing overhead cost of $621,000 were accepted as correct.)

Calculations (not required as part of solution):

Gross sales	$\frac{110}{100}(11,000,000-600,000) + 600,000$	$12,040,000
Sales returns	$\frac{3}{100} \times 12,040,000$	361,000
Sales tax	$\frac{5}{100} \times 12,040,000$	602,000
Material	$6,000,000 + \left(\frac{1}{2} \times \frac{10}{100} \times 6,000,000\right)$	6,300,000
Labour	$600,000 + \left(\frac{3}{4} \times \frac{5}{100} \times 600,000\right)$	623,000
Overhead: Fixed	$300,000 + \left(\frac{3}{4} \times \frac{5}{100} \times 200,000\right)$	308,000
Variable	$300,000 + \left(\frac{3}{4} \times \frac{5}{100} \times 150,000\right)$	
	$+ \left(\frac{1}{2} \times \frac{10}{100} \times 150,000\right)$	313,000
Depreciation	$\frac{20}{100} \times 800,000$	160,000
Selling expenses	$900,000 + \left(\frac{3}{4} \times \frac{5}{100} \times 900,000\right)$	934,000
Administrative exp.	$600,000 + \left(\frac{90}{100} \times \frac{3}{4} \times \frac{5}{100} \times 600,000\right)$	
	$+ \left(\frac{10}{100} \times \frac{20}{100} \times 600,000\right)$	632,000
Bad debts	$\frac{1}{100}\,(12,040,000-361,000)$	117,000
Interest	$\left(\frac{5}{100} \times 800,000\right) + \left[\left(\frac{6}{100} \times 400,000\right) + \left(\frac{3}{100} \times 100,000\right)\right]$	67,000
Bonus	$\frac{10}{100}\left[1,503,000 - \left(\frac{10}{100} \times 1,045,480\right)\right]$	140,000
Corporation income taxes	$\frac{45}{100} \times 1,363,000$	613,000

INDUSTRIAL LEGISLATION

QUESTION 5 (10 marks)

Outline the main difference between the "Master and Servant" and "Principal and Agent" relationship paying particular attention to the appointment powers and termination of appointment.

SOLUTION 5.

Master and Servant

The servant is bound within the limits of the kind of work under the direction of the master. The master not only directs the work to be done, but also the manner in which the work is to be done.

Appointment of servant is created by a contract of hiring and service, the validity and effect are governed by the general principles of the law of contract. A valid and enforceable contract may be made orally, in writing, or even by contract.

Termination: If hiring is for a definite period of time, it comes to an end at the expiration of that period. If no time is fixed expressly or impliedly except for the payment of wages or salary by year, month or week, the employment may be presumed to be for a year.

However, if the servant is wilfully disobedient to a lawful and reasonable order, or commits any misconduct in connection with duties for which he was hired, he may be dismissed without notice. A servant may also be dismissed if he is unable to perform his duties due to illness of a habitual or permanent nature, incapacitating the servant from performing his duties.

On the other hand, if the master commits a breach of contract by terminating the employment of a servant without just cause or excuse before the agreed term has expired, the servant can recover damages for wrongful dismissal; the damages are measured by the amount of wages or other benefit which he is prevented from earning by the master's breach of contract.

Principal and Agent

The agent acts on behalf of the principal to create, modify, terminate or otherwise effect contractual relations between the principal and third person. A general agent is one authorized to act for his principal in all matters, or to do all acts connected with a particular business, or all acts of a particular kind. A special agent is one authorized to do some particular act, or to act upon some particular occasion, or in some particular transaction.

Appointment: In most cases an agent is appointed either orally, in writing, or by implication from the conduct of both parties. The assent of both parties is essential. If the agent is appointed to act on behalf of the principal in the execution of bonds, mortgages, or other instruments under seal, the authority to do so must be conferred only by seal, unless the execution of these instruments under seal is carried out in the presence of the principal, in which case an oral direction or assent is sufficient.

Termination: An agency may be terminated by (1) act of both parties, or (2) operation of law. In the first place, the agency may be terminated by virtue of terms, express or implied, of the original agreement creating the agency. The agency automatically comes to an end when the object for which it was created has been accomplished. An agency may be terminated by mutual agreement. The agency may also be terminated by notice of revocation given by principal to agent or vice versa. However, if the notice is wrongfully given, the injured party has only an action for damages. The agency may be terminated by the death, bankruptcy, or insanity of the principal.

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